Service Manual

PCM Digital Ensemble

SX-PR702 /PR702M

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW), (EA), (EP), (EK), (XL), (XR), (XS), (XD), (XT), (X), (XP), (XW)

Photo: SX-PR702

AREAS

(M): U.S.A.
(MC): Canada
(XM): Mexico
(EN): Norway, Sweden, Denmark, Finland
(EH): Holland, Belgium
(EF): France, Italy
(EZ): Germany
(EW): Switzerland
(EA): Austria
(EP): Spain, Portugal, South Africa
(EK): the United Kingdom
(XL): New Zealand
(XR): Australia
(XS): Malaysia
(XD): Hong Kong
(XT): Taiwan
(X): Thailand, Panama, Venezuela, Ecuador, Colombia, Chile, Peru Brasil
(XP): Philippines
(XW): Singapore

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ Specifications

KEYBOARD		88 KEYS
SOUND GENERATOR		PCM
MAXIMUM NUMBER OF NOTES PRODUCED SIMULTANEOUSLY		64 SOUNDS
SOUNDS	NUMBER OF SOUNDS	317 SOUNDS + 12 DRUM KITS + 2 DIGITAL DRAWBARS
	PIANO	GRAND, UPRIGHT, ELECTRIC, MODERN
	SOUND GROUP	GUITAR & HARPSI, STRINGS & VOCAL, BRASS, SAX & WOODWIND, ORGAN & ACCORDION, SYNTH, MALLET & ORCH PERC, WORLD PERC, GM SPECIAL, BASS, DRUM KITS, PIANO MIXTURES, ORCHESTRAL MIXTURES, DIGITAL DRAWBAR
	GM SOUNDS	128 NOTES
SOLO PIANO		○
TOUCH SENSITIVITY		○
PEDAL		SUSTAIN, SOSTENUTO, SOFT
EFFECT		SUSTAIN PEDAL, DIGITAL EFFECT, DSP EFFECT, BRILLIANCE, PIANO AMBIENCE, DIGITAL REVERB
PART SELECT		RIGHT1, RIGHT2, LEFT
TRANSPOSE		G-C-F#
RHYTHMS	NUMBER OF RHYTHMS	128 RHYTHMS × 4 VARIATIONS
	RHYTHM GROUP	ROCK & POP, JAZZ & BLUES, COUNTRY, BALLAD, LATIN & WORLD, SOUL & DISCO, BIG BAND & SWING, USA TRAD,MARCH & WALTZ, SHOW TIME & TRAD DANCE
METRONOME		○
CONTROLS		MAIN VOLUME, APC/SEQUENCER VOLUME, BALANCE, MUTE, CONDUCTOR, START/STOP, INTRO & ENDING 1, INTRO & ENDING 2, FILL IN 1, FILL IN 2, COUNT INTRO, SYNCHRO START, TEMPO/PROGRAM, TAP TEMPO, FADE IN/OUT, SPLIT POINT, R1/R2 OCTAVE
PIANO PERFORMANCE PADS		20 BANKS × 6 PADS WITH SOLO (USER BANK × 3 [STORAGE CAPACITY: APPROX. 3500NOTES], COMPILE BANKS × 2, CONTROL PRESET × 1) STOP/RECORD, AUTO SETTING
AUTO PLAY CHORD		MODE: BASIC, ADVANCED 1, ADVANCED 2, PIANIST ON BASS, CHORD FINDER, LEFT HOLD

Technics

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MUSIC STYLE ARRANGER	○
SOUND ARRANGER	○
PIANO STYLIST	○
ONE TOUCH PLAY	○
TECHNI-CHORD	○
PANEL MEMORY	3 BANKS × 8, SET, NEXT BANK, BANK VIEW
SEQUENCER	16 TRACKS RESOLUTION : 1/96 PER BEAT STORAGE CAPACITY : APPROX. 40000 NOTES (10 SONGS MAX.) INPUT MODES : EASY RECORD, REALTIME RECORD, STEP RECORD FUNCTIONS : CREATE, EDIT
COMPOSER	5 PARTS : BASS, ACCOMP 1, ACCOMP 2, ACCOMP 3, DRUMS STORAGE CAPACITY : APPROX. 10000 NOTES INPUT MODES : EASY COMPOSER, REALTIME RECORD, STEP RECORD FUNCTIONS : PATTERN COPY, SEQ TO COMPOSER COPY, LOAD SINGLE COMPOSER MEMORY : 3 BANKS × 10 (VARIATION 1–4, INTRO 1, 2, FILL IN 1, 2, ENDING 1, 2)
DISK DRIVE	3.5 inch FLOPPY DISK DRIVE for 2HD (1.44 MB), 2DD (720 KB) LOAD, SAVE, DIRECT PLAY, SONG MEDLEY, DISK TOOLS, PREFERENCES
SOUND SETTING	PART SETTING, MIXER, MASTER TUNING, KEY SCALING, TECHNI-CHORD, REVERB, TONE CONTROL, DSP EFFECT, PIANO AMBIENCE
SOUND EDIT	EASY EDIT, TONE SELECT, TONE LAYER, PITCH, FILTER, AMPLITUDE, DIGITAL EFFECT, CONTROLLER MEMORY: 40, 1 USER DRUM KIT
CONTROL	INITIAL, PEDAL SETTING, DISPLAY TIME OUT, PANEL MEMORY MODE, MUSIC STYLE ARRANGER MODE, FADE IN/OUT SETTING
DISPLAY	LCD PAGE, CONTRAST, EXIT, DISPLAY HOLD
HELP	○
DEMO	○
TERMINALS	PHONES × 2, LINE OUT (R/R+L, L), AUX IN (R/R+L, L), COMPUTER, MIDI (IN, OUT, THRU), PEDAL IN
MIC INPUT	○ (MIC REVERB & EFFECT)
OUTPUT	120 W (60 W × 2)
SPEAKERS	16 cm × 2, 6.5 cm × 2, MONITOR SPEAKER × 2
POWER REQUIREMENT	120 W
	AC120/220/240 V 50/60 Hz AC120 V 60 Hz (NORTH AMERICA AND MEXICO) AC230-240 V 50/60 Hz (EUROPE, AUSTRALIA, NEW ZEALAND, SINGAPORE AND PHILIPPINES)
DIMENSIONS (W × H × D)	139.7 cm × 107.5 cm × 62.4 cm (55" × 42-5/16" × 24-9/16")
NET WEIGHT	79kg (174.2lbs.)
ACCESSORIES	AC CORD, FLOPPY DISK

•Specifications are subject to change without notice for further improvement.

WARNING

To prevent the risk of fire, smoke, or electrical shock and to ensure safe operation, please be sure to follow the safety guidelines below.

1. At places where special caution is required, the necessary safety precautions are clearly labeled or printed, for example, on the cabinet, or on the part concerned. Please follow these safety precautions, and also those listed in the Owner's Manual.
2. Parts which have a ⚠ mark in the circuit diagram or in the parts list are essential for safety. When replacing these parts, be sure to use only the specified parts.
3. Use the specified types for internal wiring (double-insulated wiring, etc.).
4. When replacing parts on the AC primary side (power transformer, electric switch, electrical cord, noise-prevention condenser, etc.), wind the lead wire and secure it by soldering.
5. Do not let the wiring come into contact with heat-emitting devices (fuse resistor, radiator plate, etc.).
6. When replacing the wiring, make sure that it is not in contact with the unfinished or rough edge of a part.
7. When replacing the power cord (except for the plug-in type), tug it from various directions to confirm that it does not slip out of place.
8. Spacing
   If soldering was done on the AC primary circuit, confirm that the interval between the soldered terminals or between the terminal and surrounding metallic parts is at least the minimum required (between the primary circuit and the chassis: at least 6.5 mm; between primary circuit terminals: at least 4.0 mm; between primary circuit terminals and secondary circuit terminals: at least 6.5 mm).

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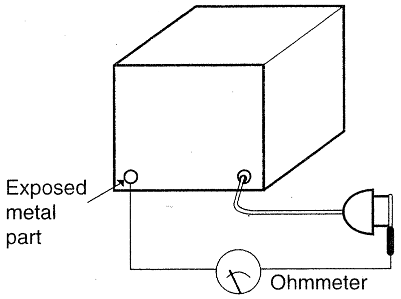
SAFETY PRECAUTION

● Safety Precaution

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

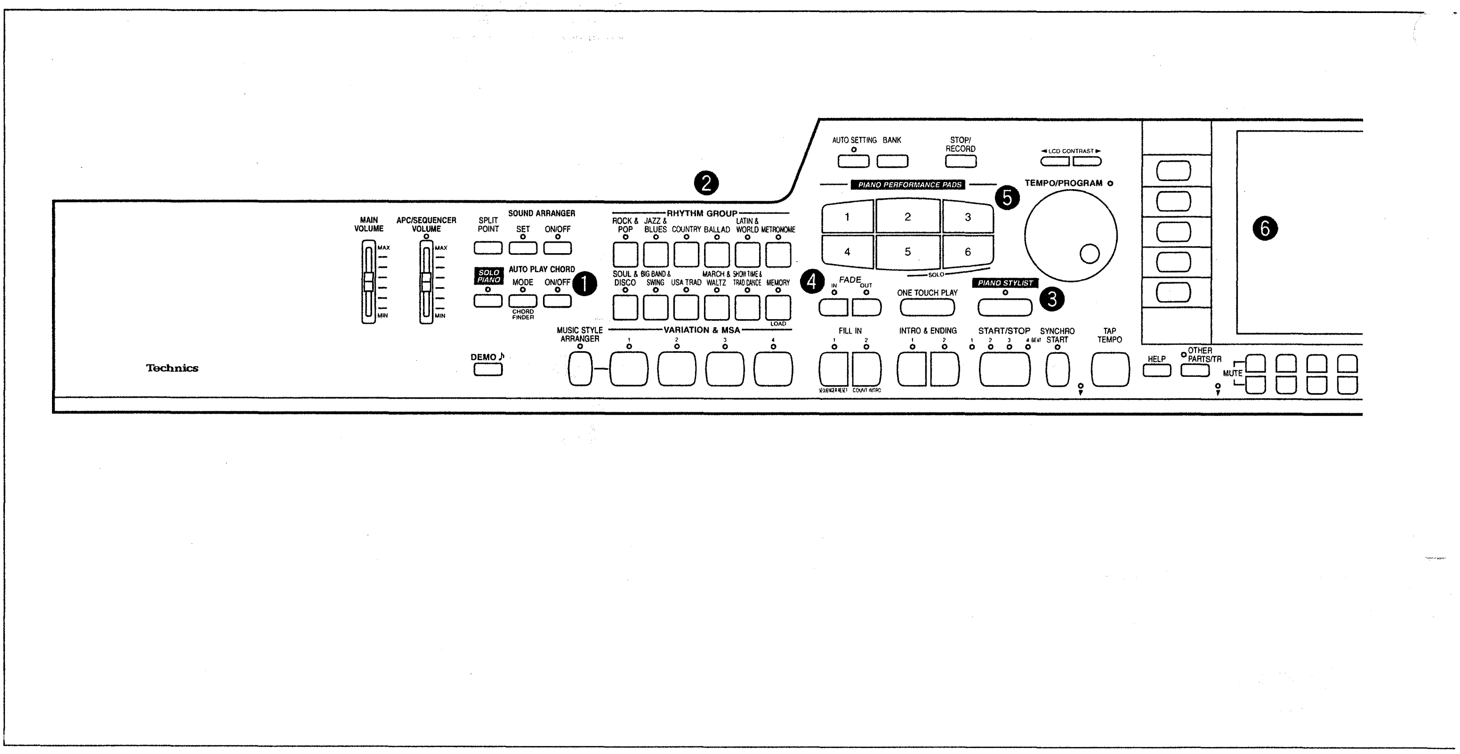
● Insulation Resistance Test

1. Unplug the power cord and short the prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc. Measurements should range from 4 MΩ to infinity for all exposed parts.



Resistance = 4MΩ to ∞

ARRANGEMENT OF CONTROL PANEL


Technics
MAIN VOLUME
APC/SEQUENCER VOLUME
MAX
MIN
SPLIT POINT
SOUND ARRANGER
SET
ON/OFF
SOLO PIANO
AUTO PLAY CHORD
MODE
ON/OFF
CHORD FINDER
DEMO ♪
❶
❷
RHYTHM GROUP
ROCK & POP
JAZZ & BLUES
COUNTRY
BALLAD
LATIN & WORLD
METRONOME
SOUL & DISCO
BIG BAND & SWING
USA TRAD
MARCH & WALTZ
SHOW TIME & TRAD DANCE
MEMORY
LOAD
MUSIC STYLE ARRANGER
VARIATION & MSA
1
2
3
4
❹
FADE
IN
OUT
FILL IN
1
2
SEQUENCER RESET
COUNT INTRO
AUTO SETTING
BANK
STOP/RECORD
PIANO PERFORMANCE PADS
❺
1
2
3
4
5
6
SOLO
ONE TOUCH PLAY
PIANO STYLIST
❸
INTRO & ENDING
1
2
START/STOP
1
2
3
4 BEAT
SYNCHRO START
TAP TEMPO
◄ LCD CONTRAST ►
TEMPO/PROGRAM
❻
HELP
OTHER PARTS/TR
MUTE

❶ **AUTO PLAY CHORD**
Add an automatic accompaniment to your selected rhythm.

❷ **RHYTHM GROUP**
Various rhythm patterns are available for each rhythm group.

❸ **PIANO STYLIST**
You can choose to have all the settings of this instrument automatically set.

❹ **FADE IN/OUT**
Begin your song with a slowly increasing volume, or end it by having the sound slowly fade away.

❺ **PIANO PERFORMANCE PADS**
Add various phrases to your performance with the pad buttons.

❻ **DISPLAY**
Displays performance information, function settings and other messages.
- Use the LCD CONTRAST buttons to adjust the display so that it is easy to read.

❼ **PANEL MEMORY**
Store the panel settings, then recall them instantaneously just by pressing a button or two.

❽ **CONDUCTOR**
Assign a different sound to each part, then assign the desired parts to sections of the keyboard.

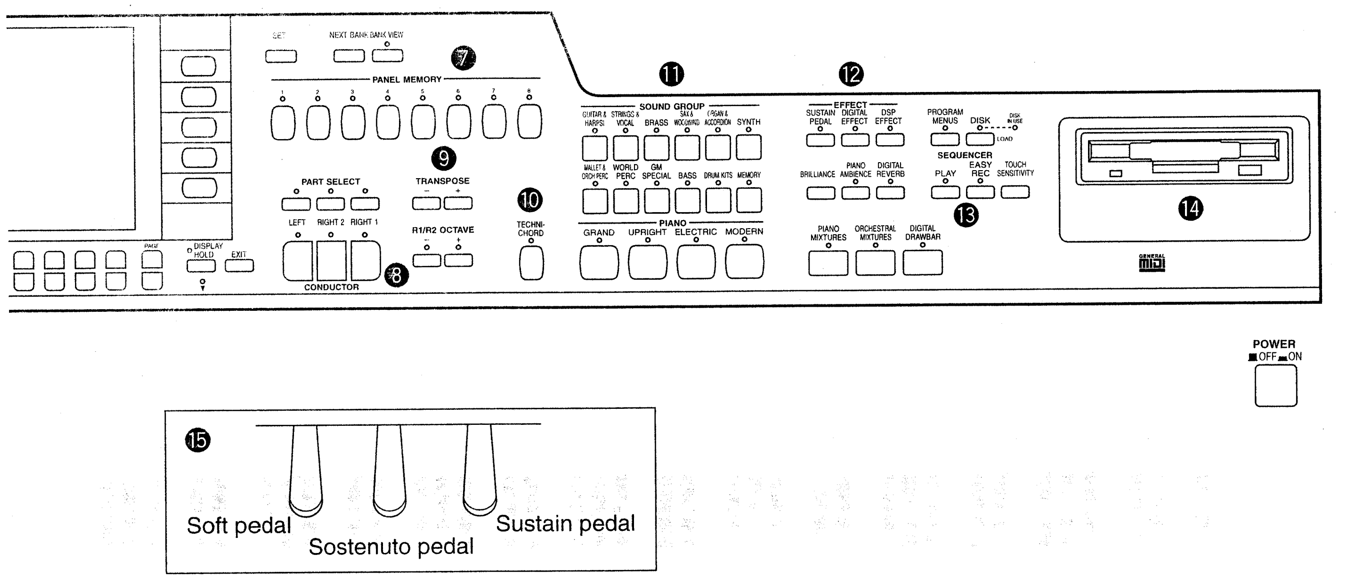
❾ **TRANSPOSE**
Raise or lower the key of the entire keyboard.

❿ **TECHNI-CHORD**
Block chords are automatically added to the melody.

⓫ **SOUND GROUP**
Various sounds are available for each sound group.

⓬ **EFFECT**
Add various effects to the sounds.

⓭ **SEQUENCER**
Record and play back your performance.


SET
NEXT BANK
BANK VIEW
⑦
PANEL MEMORY
1
2
3
4
5
6
7
8
⑨
PART SELECT
TRANSPOSE
–
+
⑩
LEFT
RIGHT 2
RIGHT 1
R1/R2 OCTAVE
TECHNI-CHORD
PAGE
DISPLAY HOLD
EXIT
CONDUCTOR
⑧
⑪
SOUND GROUP
GUITAR & HARPSI
STRINGS & VOCAL
BRASS
SAX & WOODWIND
ORGAN & ACCORDION
SYNTH
MALLET & ORCH PERC
WORLD PERC
GM SPECIAL
BASS
DRUM KITS
MEMORY
PIANO
GRAND
UPRIGHT
ELECTRIC
MODERN
⑫
EFFECT
SUSTAIN PEDAL
DIGITAL EFFECT
DSP EFFECT
BRILLIANCE
PIANO AMBIENCE
DIGITAL REVERB
PIANO MIXTURES
ORCHESTRAL MIXTURES
DIGITAL DRAWBAR
PROGRAM MENUS
DISK
DISK IN USE
LOAD
SEQUENCER
PLAY
EASY REC
TOUCH SENSITIVITY
⑬
⑭
POWER
OFF
ON
⑮
Soft pedal
Sostenuto pedal
Sustain pedal

⑭ Disk Drive

The Disk Drive allows you to record your performances on a floppy disk, as well as play commercial recorded disks on this instrument.

⑮ Pedals

The sustain pedal and sostenuto pedal apply sustain effects, and the soft pedal works as a damper.

Tuning

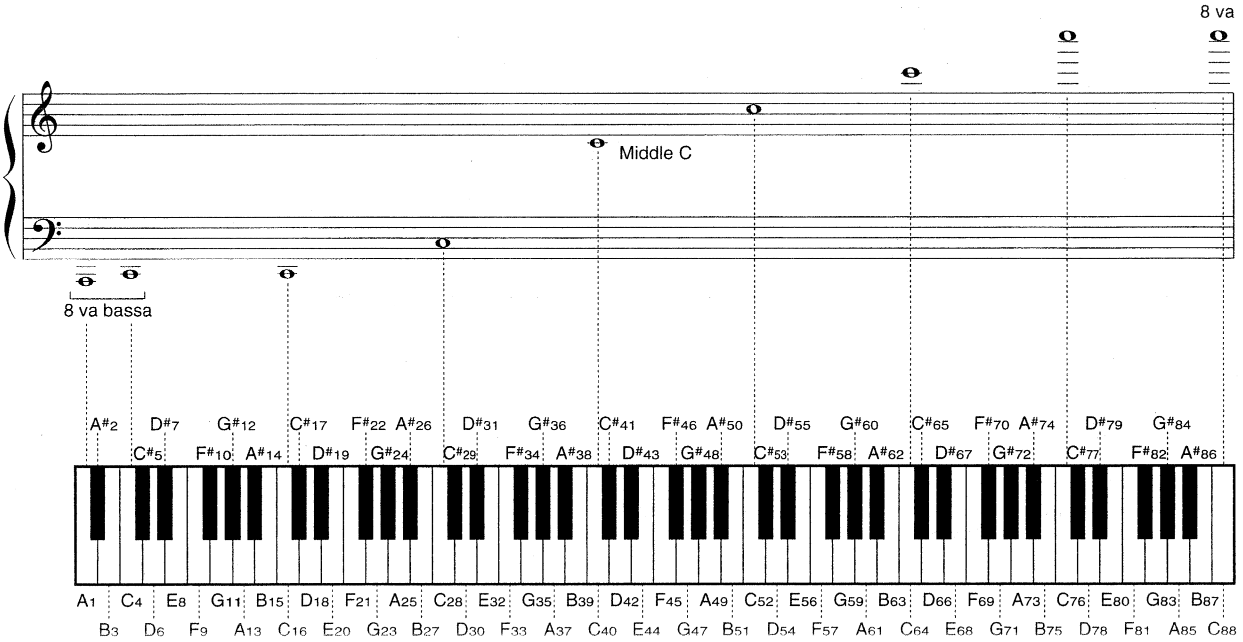
Unlike an acoustic piano, PR Series Digital Ensemble never needs tuning.
The pitch of this instrument can be adjusted for when playing along with other instruments.

About the backup memory

The settings and memories are maintained for approximately 80 minutes after the power to this instrument is turned off. If you wish to keep the memory contents, before you turn off the instrument, use the SAVE procedure to store the desired data on a disk for recall at a later time.

- The backup memory does not function until the power has been on for about 10 minutes.
- When you quit the operating mode, a REMINDER display may appear to remind you to save the data.

KEYBOARD RANGES


8 va
Middle C
8 va bassa
A#2 D#7 G#12 C#17 F#22 A#26 D#31 G#36 C#41 F#46 A#50 D#55 G#60 C#65 F#70 A#74 D#79 G#84
C#5 F#10 A#14 D#19 G#24 C#29 F#34 A#38 D#43 G#48 C#53 F#58 A#62 D#67 G#72 C#77 F#82 A#86
A1 C4 E8 G11 B15 D18 F21 A25 C28 E32 G35 B39 D42 F45 A49 C52 E56 G59 B63 D66 F69 A73 C76 E80 G83 B87
B3 D6 F9 A13 C16 E20 G23 B27 D30 F33 A37 C40 E44 G47 B51 D54 F57 A61 C64 E68 G71 B75 D78 F81 A85 C88

INITIAL SETTING

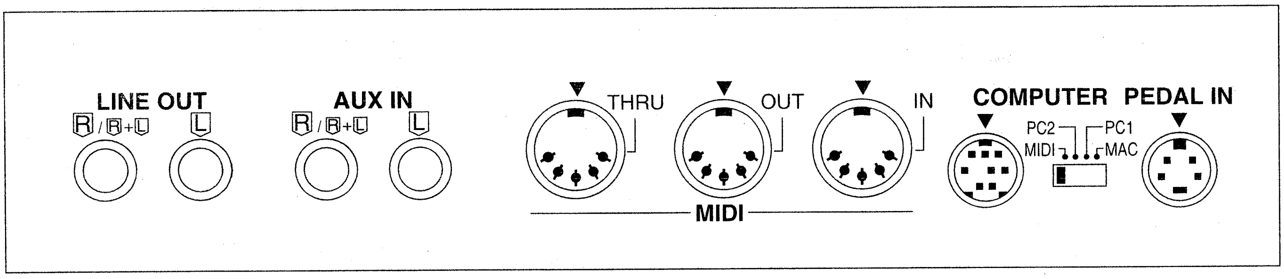
The following procedure resets all programmable settings, functions and memories to their initialized (factory-preset) status. Use this procedure if the buttons, keys, etc. malfunction, or when you wish to reset the memories and functions.

1. Turn off the **POWER** button.
2. While pressing the three lower left buttons in the **RHYTHM GROUP** section (**SOUL & DISCO**, **BIG BAND & SWING** and **USA TRAD**) at the same time, turn the **POWER** button on again.

NOTE:
All stored data in the SEQUENCER and COMPOSER and other user settings will be deleted with this operation.

TERMINALS

(on the rear panel)



LINE OUT (output level 1.5 Vrms, 600 Ω)
By connecting an external high-power amplifier, the sound can be reproduced at a high volume. To output monaural sound, connect the external equipment to the **R/R+L** terminal. (Do not connect the **L** terminal.)

AUX IN (input level 0.5 Vrms, 6 kΩ)
Other instruments such as a sound generator can be connected to this terminal, and the sound will be output from this instrument's speakers. To receive monaural sound, connect the other instrument to the **R/R+L** terminal. (Do not connect the **L** terminal.)

MIDI
These terminals are for connection to another MIDI instrument.

COMPUTER
By connecting this terminal to the serial port of a computer, performance data can be exchanged. Use the switch to select the type of computer.

- Be sure that the power to this instrument is turned off when connecting to a computer or when changing the switch setting.

> Caution:
> Failure to turn off the power before changing the switch setting may result in malfunction.

- When no computer is connected, or when a MIDI interface is used, the switch should be set to MIDI.

Connection to a Macintosh series computer
Use an ACCESSORY CABLE (SZ-JJAP1: sold separately) to connect the **COMPUTER** terminal of this instrument to the modem port or printer port of a Macintosh Series computer. Set the switch to **MAC**.

- Set the MIDI interface clock of the Macintosh software to 1 MHz.
- Do not remove the core at either end of the cable.

Connection to a PC
Use an ACCESSORY CABLE (SZ-JJAT1: sold separately) to connect the **COMPUTER** terminal of this instrument to the RS232C terminal of a PC. Set the switch to **PC2**.

- The MIDI driver included with the cable should be installed in the computer. (Refer to the manual accompanying the cable.)
- Do not remove the core at either end of the cable.

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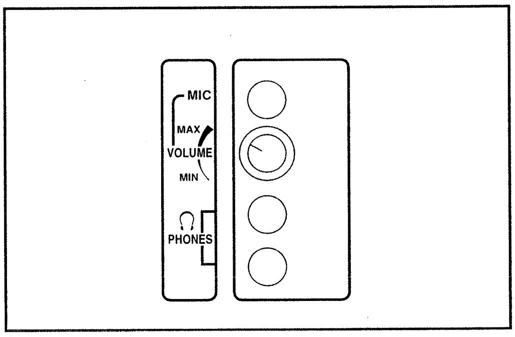
(beneath the left end of keyboard)



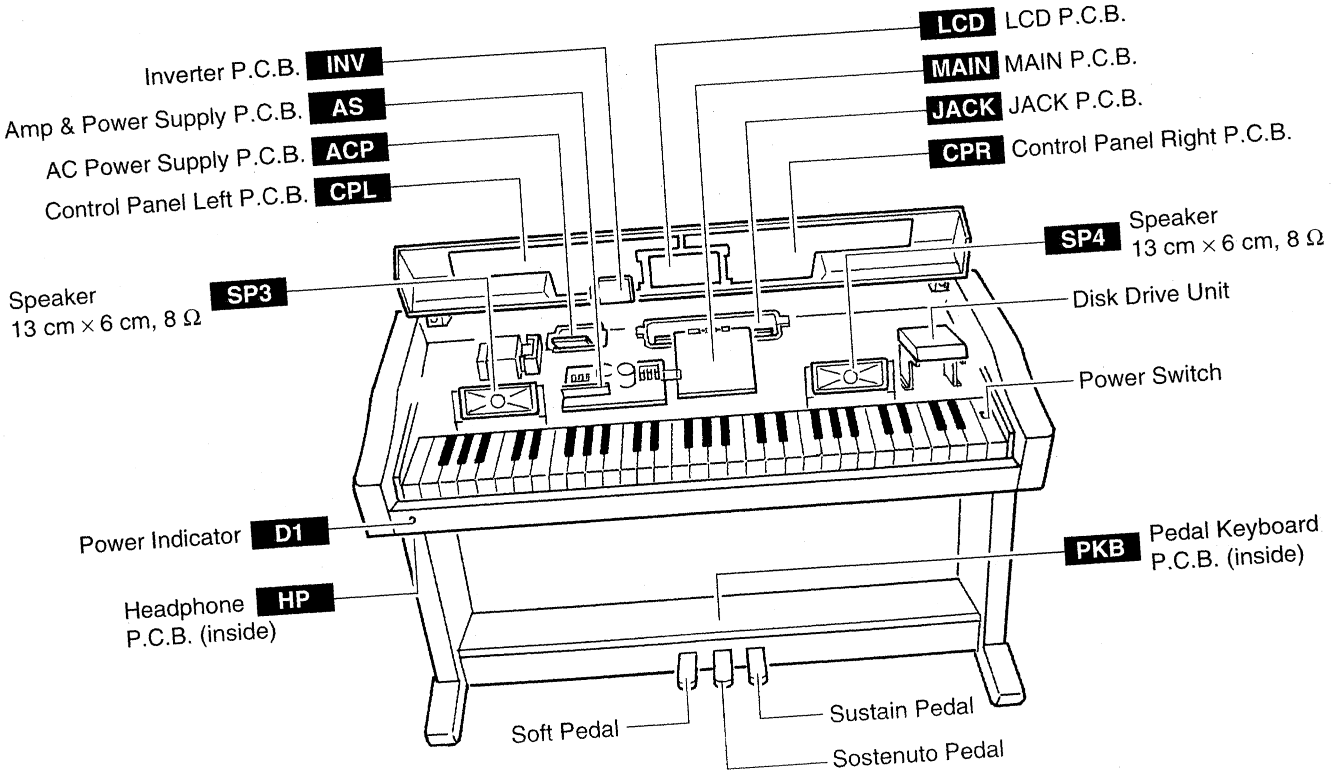
PHONES ×2
Headphones can be connected to this instrument.

- When headphones are plugged into this jack, the speakers of this instrument are disabled.

MIC
A microphone can be connected to this instrument and the sound output through the speakers. Use the **VOLUME** control to adjust the volume.

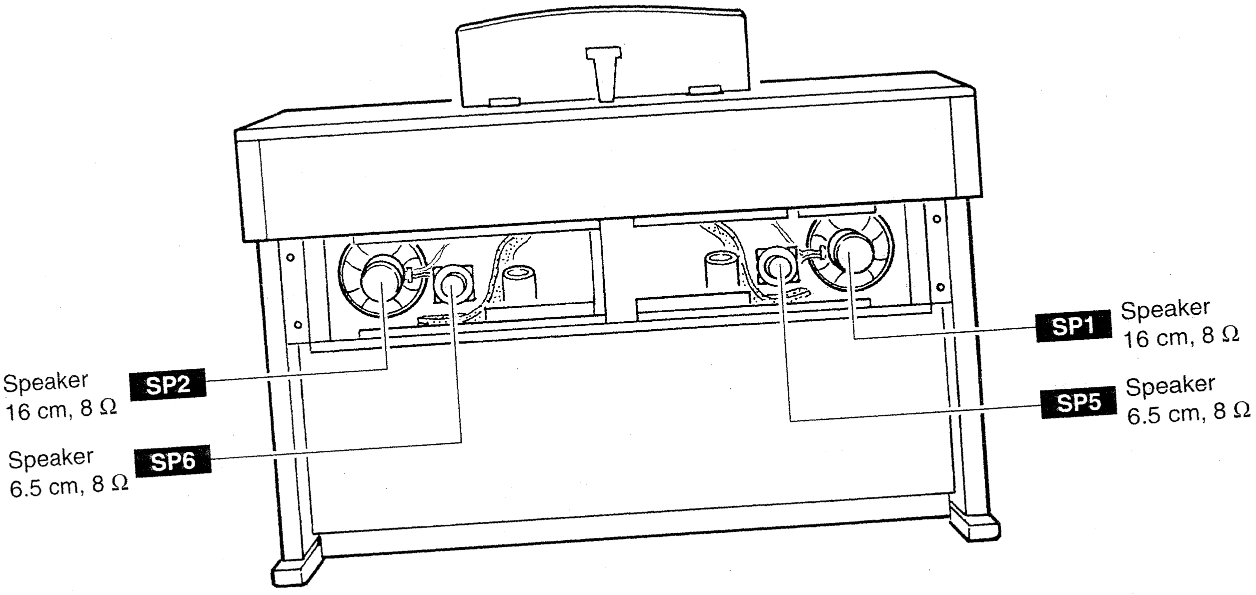
- Effects such as reverb can be applied to the microphone input.

PARTS LOCATION



LCD LCD P.C.B.
MAIN MAIN P.C.B.
JACK JACK P.C.B.
CPR Control Panel Right P.C.B.
Inverter P.C.B. INV
Amp & Power Supply P.C.B. AS
AC Power Supply P.C.B. ACP
Control Panel Left P.C.B. CPL
SP4 Speaker 13 cm × 6 cm, 8 Ω
Speaker 13 cm × 6 cm, 8 Ω SP3
Disk Drive Unit
Power Switch
Power Indicator D1
PKB Pedal Keyboard P.C.B. (inside)
Headphone P.C.B. (inside) HP
Soft Pedal
Sustain Pedal
Sostenuto Pedal

[Fig. 1]



SP1 Speaker 16 cm, 8 Ω
SP5 Speaker 6.5 cm, 8 Ω
Speaker 16 cm, 8 Ω SP2
Speaker 6.5 cm, 8 Ω SP6

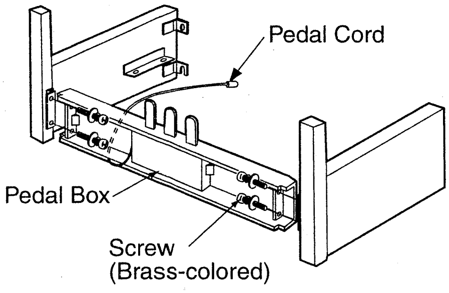
[Fig. 2]

HOW TO ASSEMBLE THE PIANO

To prevent the piano unit from falling off the stand, secure it firmly with the screws.

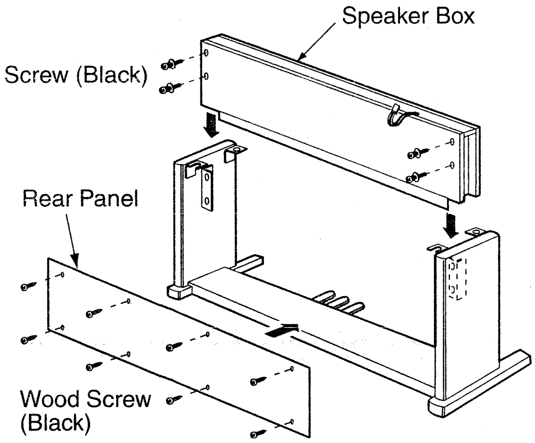
1 Assemble the right and left side planks and the pedal box with the 4 brass-colored screws.

- Loosen the pedal cord, stowed on the inner side of the pedal box, and extend it.


Pedal Cord
Pedal Box
Screw
(Brass-colored)

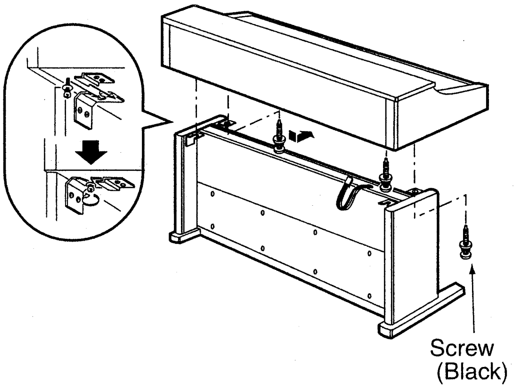
[Fig. 3]

2 Place the stand upright and mount the speaker box onto the L-shaped brackets with 4 black screws.
And mount the rear panel with 8 black wood screws.


Speaker Box
Screw (Black)
Rear Panel
Wood Screw
(Black)

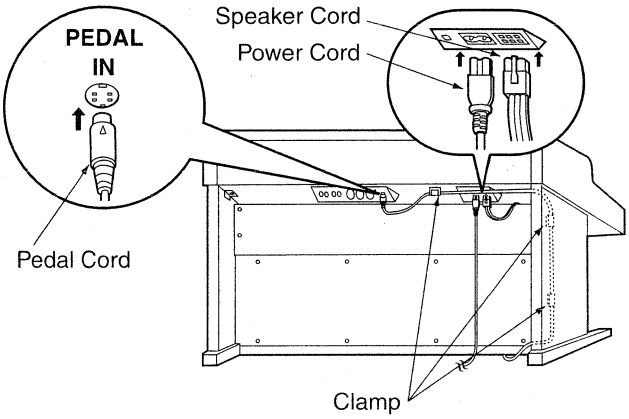
[Fig. 4]

3 Place the piano unit on the stand and secure it with 4 black screws.


Screw
(Black)

[Fig. 5]

4 Connect the pedal cord, speaker cord and power cord to the terminals located on the rear of the piano unit as shown below.


PEDAL
IN
Speaker Cord
Power Cord
Pedal Cord
Clamp

[Fig. 6]

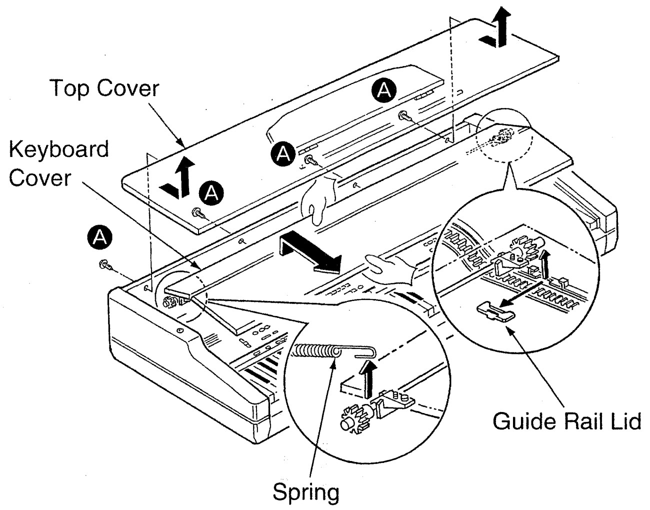
DISASSEMBLY INSTRUCTIONS

1 Removing the top cover

1. Remove the top cover mounting screws (Ⓐ 4 pcs.).
2. Lift up the top cover (as shown by the arrows).

2 Removing the keyboard cover

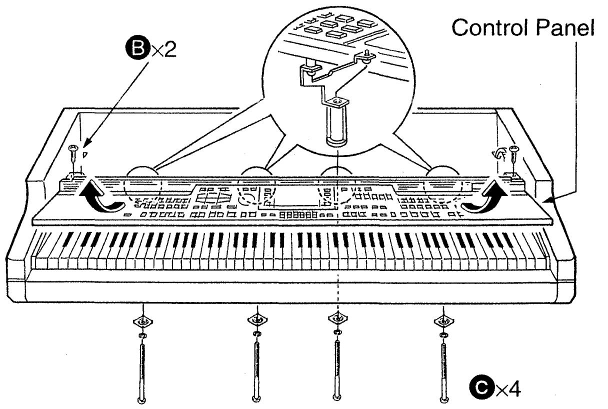
1. Remove the top cover (see step 1).
2. Release the spring from the shaft.
3. Remove the guide rail lids from the guide rails.
4. Match the gears of the keyboard cover with the notches in the guide rails and lift up the keyboard cover, and slide it forward (as shown by the arrow).



[Fig.7]

3 Removing the control panel

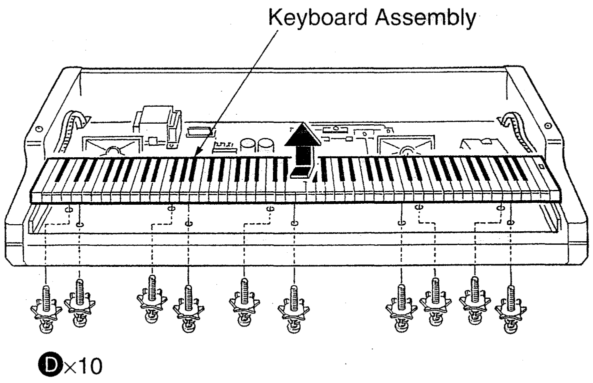
1. Remove the keyboard cover (see step 2).
2. Remove the control panel mounting screws (Ⓑ 2 pcs. and Ⓒ 4 pcs.).
3. Remove the control panel as shown by the arrows.



[Fig.8]

4 Removing the keyboard assembly

1. Remove the control panel (see step 3).
2. Remove the keyboard assembly mounting screws located on the bottom of the cabinet (Ⓓ 10 pcs.).
3. Remove the keyboard assembly as shown by the arrow.



[Fig.9]

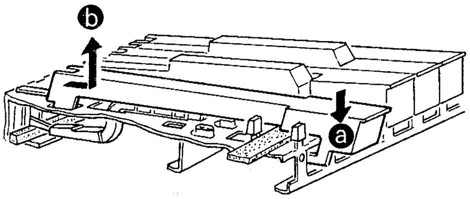
5 Key(s)

Disassembly

1. Remove the keyboard assembly (see step 4).
2. Release the key claw.
   - ⓐ Press the front of the key downward slightly.
   - ⓑ Press the rear of the key forward gently.
3. To remove the key, lift it as shown in Fig. 10.

NOTE:

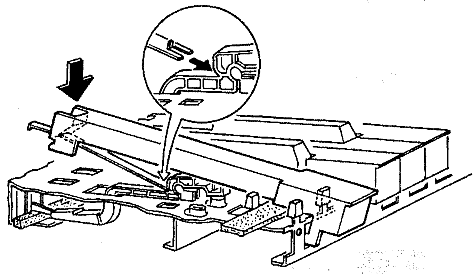
- The key claw is easily broken. Do not apply undue force. Should a key claw break, it can still be used; however, a replacement is recommended.
- If a black key is to be replaced, it is necessary to remove both adjacent white keys.



[Fig.10]

Assembly

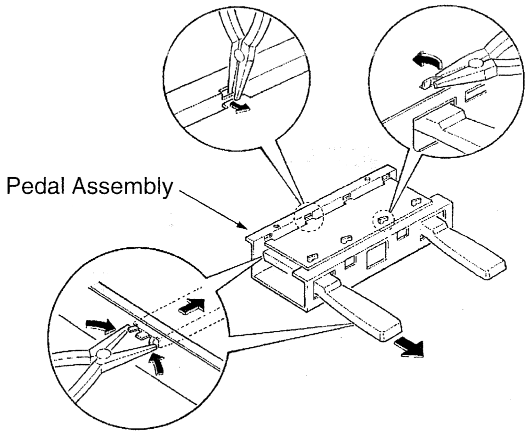
1. Insert the front part of the key into the chassis.
2. Insert the plate spring into the hammer notch as shown in Fig. 11.
3. While slowly lowering the key into the chassis, insert the plate spring into the notch at the rear of the key.
4. Carefully insert the key into the opening in the chassis and slide the key towards the rear to lock it in place.



[Fig.11]

6 Disassembly of the pedal assembly

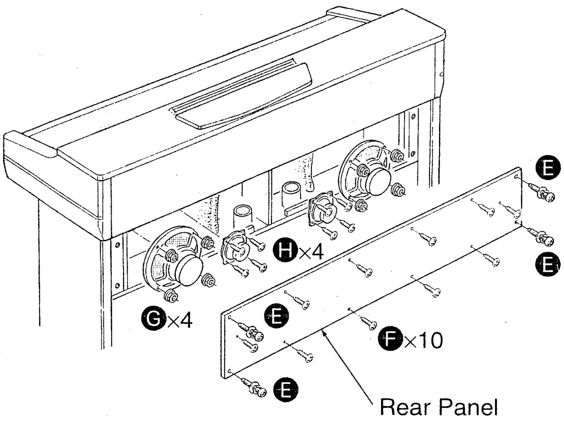
1. Remove the pedal assembly from the pedal box.
2. Disassemble the pedal assembly as shown in Fig. 12.



[Fig.12]

7 Removing the speakers

1. Remove the rear panel mounting screws Ⓔ 4 pcs. and Ⓕ 10 pcs.).
   - Be careful that the speaker box does not fall off, since it comes free of the L-shaped bracket of the stand.
2. Remove the 16 cm speaker mounting nuts (Ⓖ 4 pcs.).
3. Remove the 6.5 cm speaker mounting screws (Ⓗ 4 pcs.).



[Fig.13]

8 Removing the MAIN, AS, JACK, HP, ACP, LCD P.C.B.

- Remove the keyboard cover (see step 2).
- Pull out the connectors on the printed circuit boards.

MAIN P.C.B.

1. Remove the MAIN P.C.B. mounting screws (🅘 2 pcs.).
2. Release the claws of the 3 P.C.B. holders.

AS P.C.B.

1. Release the claws of the 9 P.C.B. holders.

JACK P.C.B.

1. Remove the MAIN P.C.B.
2. Remove the JACK P.C.B. mounting screws (🅙 4 pcs.).
3. Remove the ground wire mounting screws (🅚 3 pcs.).

HP P.C.B.

1. Remove the keyboard assembly (see step 4).
2. Remove the HP P.C.B. mounting screws (🅛 2 pcs.).
3. Pull out the volume control knob.
4. Remove the headphone jack mounting nuts (🅜 4 pcs.).

ACP P.C.B.

- Release the claws of the AC IN connector bracket.

LCD P.C.B.

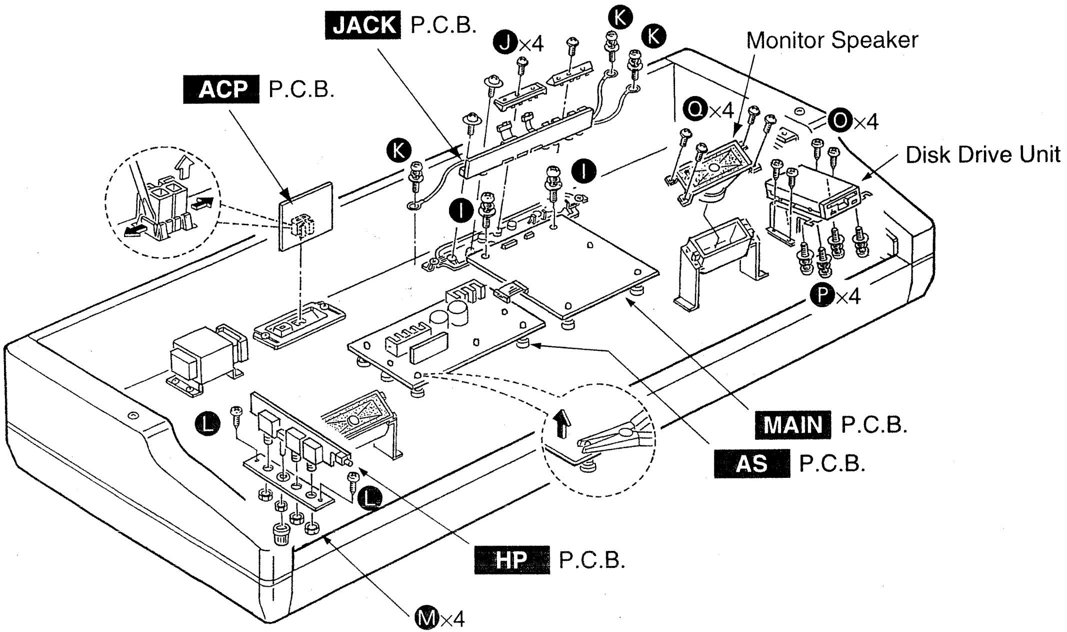
1. Remove the control panel (see step 3).
2. Remove the LCD P.C.B. mounting screws (🅝 6 pcs.).

9 Removing the Disk Drive unit

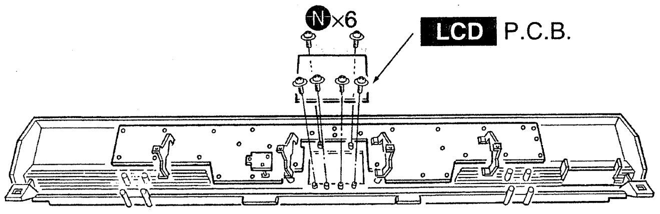
1. Remove the keyboard cover (see step 2).
2. Pull out the connector from the Disk Drive unit.
3. Remove the chassis on which Disk Drive unit is attached (🅞 4 pcs.).
4. Remove the Disk Drive unit mounting screws (🅟 4 pcs.).

10 Removing the monitor speakers

1. Remove the keyboard cover (see step 2).
2. Remove the monitor speaker mounting screws (🅠 4 pcs.).



[Fig.14]



[Fig.15]

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in this instrument but do not indicate trouble.

Phenomenon		Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	• Turn off the **POWER** button once, then turn it on again. If this procedure is not successful, turn off the **POWER** button once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section (**SOUL & DISCO**, **BIG BAND & SWING** and **USA TRAD**) at the same time, turn the **POWER** button on again. (Note that, in this case, all programmable settings, functions and memories return to their factory-preset status.)
	No sound is produced when the keys are pressed.	• The **MAIN VOLUME** is at the minimum setting. Adjust the volume with the **MAIN VOLUME** control. • The volumes for the selected parts are set to the minimum levels. Use the balance buttons to set the volumes of the relevant parts to appropriate levels. • The part is muted. • The LOCAL CONTROL for a part performed on the keyboard is set to OFF. Set the LOCAL CONTROL to ON.
	Only percussive instrument sounds are produced when the keyboard is played.	• In the **SOUND GROUP** section, the **DRUM KITS** button is on.
	The volume is very low when the keyboard is played.	• The volume setting in the **SEQUENCER** contents is very low. Follow the INITIAL procedure to reset the settings.
	Some sounds cannot be selected.	• When the GENERAL MIDI status is set to ON, The sounds which can be selected and operation which can be executed are limited. Turn the GENERAL MIDI status OFF to return the instrument to its normal operation.
	The sound you hear is different from the sound you selected.	• This sometimes occurs when you play back **SEQUENCER** or **COMPOSER** data which was created on a different model, or when MIDI data is received from a connected instrument. Select the desired sounds again.
	The sustain does not work even when the sustain pedal is depressed.	• The sustain pedal is not connected. Connect the pedal cord firmly to the **PEDAL IN** terminal on the back of the instrument. • When the **SUSTAIN PEDAL** button is off, the sustain does not work even when the pedal is depressed. Turn on the **SUSTAIN PEDAL** button.
	The sostenuto pedal and soft pedal do not operate properly. For example, when the soft pedal is depressed, the rhythm starts or a fill-in is played.	• Different functions can be programmed in these pedals. You can return the pedals to their original functions by turning off the instrument once, or by using the PEDAL SETTING mode.

Phenomenon		Remedy
Rhythm	The rhythm does not start.	• The **DRUMS** volume is set to the minimum level. Use the balance buttons to set the **DRUMS** volume to an appropriate level. • The Classic Ballad rhythm of the **BALLAD** group is selected. Use the **AUTO PLAY CHORD** in your performance. • A **SEQUENCER PLAY** button is on. When you are not playing back the **SEQUENCER** performance, turn off the **SEQUENCER PLAY** button. • CLOCK is set to MIDI. Set CLOCK to INTERNAL. • The rhythm does not work when the GENERAL MIDI mode is set to ON. Turn the GENERAL MIDI status OFF to return the instrument to its normal operation.
AUTO PLAY CHORD	No sound is produced for the automatic accompaniment, or only the sounds of some parts are produced.	• An **ACCOMP** part does not sound if its corresponding volume is set to the minimum level. Use the respective balance buttons to set the **ACCOMP 1**, **2** and **3** volumes to appropriate levels.
SEQUENCER	Storage is not possible.	• The remaining memory capacity of the **SEQUENCER** is 0. Follow the SONG CLEAR or TRACK CLEAR procedure to erase the memory.
	The playback measure indication is different from when the performance was recorded.	• The number of measures corresponds to the time signature of the rhythm selected at the start of recording. To change the rhythm in the middle of the song, record the rhythm change in the RHYTHM part.
COMPOSER	Storage is not possible.	• The remaining memory capacity of the **COMPOSER** is 0.
	Setting the time signature and number of measures is not possible.	• The time signature and number of measures cannot be changed for a pattern which is currently recorded in the **COMPOSER**. If you wish to change the time signature and/or measure data, first follow the procedure to clear the memory.
	The playback timing of the rhythm pattern is different from the timing with which it was recorded.	• The QUANTIZE function was on when the pattern was recorded and the timing was automatically corrected. Set the quantize level to a smaller note unit or to OFF when recording.

	Phenomenon	Remedy
Disk Drive	The Disk Drive produces a noise during recording or playback.	• This occurs when the Disk Drive is reading a disk. It does not indicate a problem.
	When the procedure to load from a disk is performed, the contents of the instrument's memory are erased.	• When performing the load operation from a disk, this instrument's memory changes to that of the data loaded from the disk. If you wish to preserve a song which is stored in the instrument's memory, save it on a disk before performing the load procedure.
MIDI	Data cannot be exchanged through MIDI terminals.	• The switch for the **COMPUTER** terminal is not set to **MIDI**. Turn off the power to this instrument and set the switch to **MIDI**. • Match the channels on the transmitting side and the receiving side.
	The sound quavers or is distorted.	• When the **COMPUTER** terminal or both the **MIDI IN** and **OUT** terminals are connected to a computer, depending on the computer software the received data may be sent back to the instrument just as it is. Because of this the sound generated from the keys and the sound generated from the returned data are both produced, causing undesirable effects, such as the sounds canceling each other out, for example. In this case, either change the software settings to prevent received data from being returned, or set the MIDI LOCAL CONTROL to off.
Other	Noise from a radio or TV can be heard.	• This sometimes occurs when electrical equipment such as a radio or TV is used near the instrument. Try moving such electrical equipment further away from the instrument. • The sound may be coming from a nearby broadcast station or amateur radio station. If the sound is bothersome, consult your dealer or service center.
	The cabinet becomes warm during use.	• This instrument has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.

ERROR DISPLAY

No.	Contents
00	The data on the disk that you are using is for a different product.
01	An error has occurred while the disk was loading. Please try again!
02	There is no disk in the Disk Drive.
03	The file that you tried to load is empty.
05	An error has occurred while the disk was saving. Please try again!
06	The disk that you are using is write protected. Please remove the write protection and try again.
07	The disk that you are using is full. Please use another disk.
08	An error has occurred while the disk was formatting. The disk that you are using may be faulty. Please try formatting another disk.
10	The data is already copy protected.
15	The song you are trying to save is empty.
16	This STANDARD MIDI FILE is incompatible with the PR and cannot be loaded.
17	This is not a STANDARD MIDI FILE.
18	The timebase (PPQ resolution) that you tried to load is not 24/48/96/192/288/384 PPQ.
19	This is a FORMAT 1 MIDI FILE disk and cannot be played back.
20	A problem has occurred with your **SEQUENCER** Data. This might be due to a damaged or faulty disk.
21	Memory full
22	It is necessary to press PUNCH OUT to complete this procedure.
23	It is impossible to change the time signature because it has already been set in the existing tracks.
24	A rhythm track already exists. It is impossible to assign two tracks to rhythm.

No.	Contents
25	It is only possible to change the velocity on a melody track.
26	It is only possible to merge melody tracks. Tracks such as rhythm, chord and control cannot be merged.
27	It is only possible to copy melody tracks. Tracks such as rhythm, chord and control cannot be copied.
28	This song is too long to be saved as a MIDI file.
29	The MIDI file that you have tried to load exceeds the memory capacity of this instrument and cannot be played. The **SEQUENCER** memory has been cleared.
30	It is not possible to change the time signature or measure length of a **COMPOSER** pattern after it has been recorded. If you want to proceed, you must first clear the entire **COMPOSER** pattern.
31	The time signature of the pattern from which you are copying is different from the **COMPOSER** memory that you are using. Either: Change the time signature of the **COMPOSER** memory or: Copy from a pattern that has the same time signature
32	Memory full
33	Select a Track before setting parameters for AUTO PUNCH RECORD.
43	The file that you are trying to load was saved on a previous KN keyboard. It is only possible to load using the "PERFORMANCE" option.
46	It is only possible to insert MELODY Tracks. Tracks such as RHYTHM, CHORD and CONTROL cannot be inserted.
47	This procedure is not possible with a composer pattern or the metronome. Please select a preset rhythm pattern.
54	Please select a USER bank.

No.	Contents
55	Special tracks such as CHORD (APC), RHY and CTL exist in the song from which you are copying and are incompatible with the destination song because it is in the GM mode.
56	AUTO PUNCH recording has been unsuccessful because **SEQUENCER** operation was interrupted before the PUNCH OUT measure was reached.
58	The song that you have tried to load exceeds this instrument's available memory and cannot be loaded. The selected song memory has been cleared. Please clear existing songs in the instrument's memory using SONG CLEAR to make more memory available, and try again.
59	RKB and LKB are special tracks for compatibility with SEQUENCER data from previous PR products. They cannot be edited or recorded on.
60	RKB and LKB are special tracks which cannot be used in conjunction with RIGHT 1, RIGHT 2, LEFT and APC tracks. Please re-assign RKB and LKB to any other part and try again.
62	The computer connection is not active because the computer port switch is set to MIDI. Please turn the power off, set the switch to the desired setting and turn the power back on.
64	Please select the Panel Memory that you want to name.
65	It is not possible to use the CHORD FINDER in this mode. Please select CHORD FINDER from HOME page or CHORD STEP RECORD page.
66	SOLO pads are special pads which include Chord information. Pleases use SOLO pads when the rhythm and accompaniment is playing.
67	There are no APC or CHORD tracks. Select and APC track or CHORD track, and try again.
68	It is not possible to record directly into the SOLO pads. Record on the SEQUENCER and Copy the melody and chord information into a SOLO pad.

ABOUT THE SELF-DIAGNOSTIC FUNCTION

This model has some self-diagnostic capabilities. There are two types of self-diagnostic functions: the "power on self-test" which runs a test when the power is turned on and notifies the user if an error is detected, and the "service mode" which is used when servicing the unit.

Power on self-test

This model runs the following self-diagnostic test when power is turned on. If an error is detected, a message is displayed on the LCD to notify the user.

Communication check between the Control Panel CPU (CPL P.C.B.: IC1/CPR P.C.B.: IC1) and the MAIN CPU (MAIN P.C.B.: IC6)

When power is turned on, the model checks communications between the MAIN CPU and each Control Panel CPU. If an error is detected, the following message is displayed on the LCD.

CAUTION!!

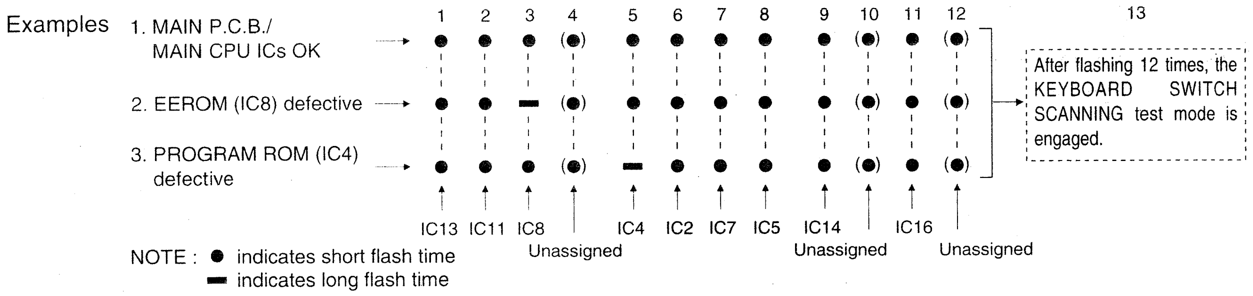
**** ERROR in CPU data transmission ****

Please try turning off and on again.
If this message appears again,
This unit needs repairing.

If this error occurs, perform the Control Panel CPU check from within the service mode. Using the self-diagnostic function, it is possible to determine which CPU (CPL/CPR P.C.B.) is suffering trouble.

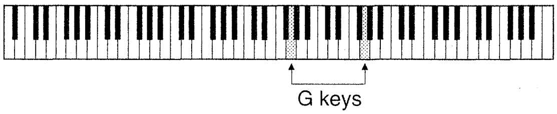
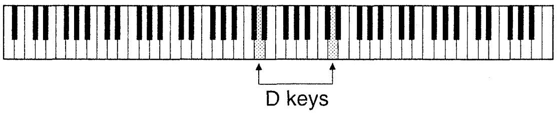
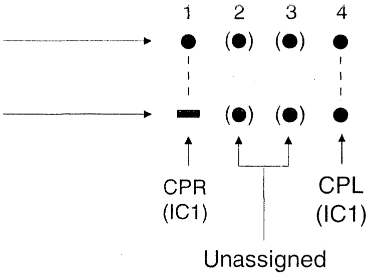
Service mode

The service mode makes it possible to determine whether the various test modes pass or fail.
The test modes in the following table are presented in an order based on circuit operation, but they are completely independent of one another. Select a mode as necessary, and run the test or check.

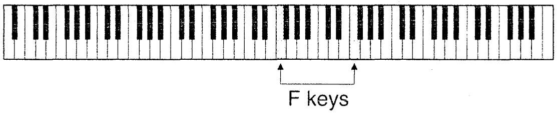
<table>
<tr><th>No.</th><th>Diagnostic Part/Diagnostic Device</th><th>Procedure of Service Mode</th></tr>
<tr><td>1</td><td>MAIN P.C.B.: MAIN CPU peripheral device
1. DRAM (IC13)
2. DRAM (IC11)
3. EEROM (IC8)
4. Unassigned
5. PROGRAM ROM (IC4)
6. PROGRAM ROM (IC2)
7. TABLE DATA ROM (IC7)
8. TABLE DATA ROM (IC5)
9. RHYTHM DATA ROM (IC14)
10. Unassigned
11. LCD CONTROLLER (IC16)
12. Unassigned</td><td>1. Connect the CHECKING DEVICE (refer to page I-20) to CN4 on the MAIN P.C.B..
2. Turn on the power switch while holding down the CHECKING DEVICE switch.</td></tr>
<tr><td></td><td colspan="2">When the power swich is turned on, the LED of the CHECKING DEVICE flashes 12 times . The order of the LED flashes corresponds to the IC number on the respective P.C.B.s as shown below. If an IC is defective, the corresponding flash time is longer.


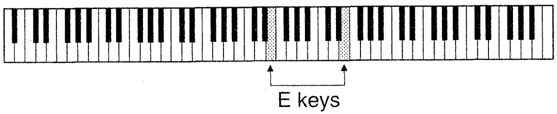
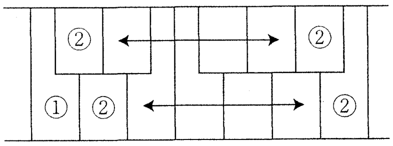
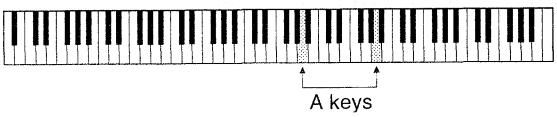
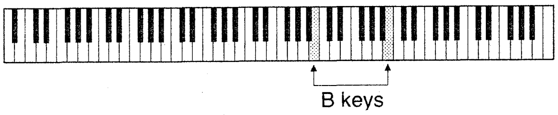
Examples
1. MAIN P.C.B./ MAIN CPU ICs OK
2. EEROM (IC8) defective
3. PROGRAM ROM (IC4) defective
1 2 3 4 5 6 7 8 9 10 11 12 13
IC13 IC11 IC8 Unassigned IC4 IC2 IC7 IC5 IC14 Unassigned IC16 Unassigned
After flashing 12 times, the KEYBOARD SWITCH SCANNING test mode is engaged.
NOTE : ● indicates short flash time
▬ indicates long flash time

• KEYBOARD SWITCH SCANNING test
When the power switch is turned on, the LED of the CHECKING DEVICE flashes 12 times and then engages the KEYBOARD SWITCH SCANNING test mode. (see the figure above.)
Pressing any of the 88 keys will light the LED of the CHECKING DEVICE, while the LED will go out when the key is released. The KEYBOARD SWITCH SCANNING test determines whether the key switches and the Tone Generator LSI (MAIN P.C.B.: IC103) are working properly or not.</td></tr>
</table>

<table>
<tr><th>No.</th><th>Diagnostic Part/Diagnostic Device</th><th>Procedure of Service Mode</th></tr>
<tr><td>2</td><td>LCD test</td><td>Turn on the power switch while holding down the two G keys shown below.

 </td></tr>
<tr><td></td><td colspan="2">While the message “LCD PANEL TEST” is displayed on the LCD, the entire screen is repeatedly switched in the order of white → black → “H” pattern.
* “H” pattern is a big “H”. It is used to check for crosstalk.</td></tr>
<tr><td>3</td><td>CPR/CPL P.C.B.:
1 chip Microcomputer (IC1) check</td><td>1. Connect the CHECKING DEVICE (refer to page I-20) to CN4 on the MAIN P.C.B..
2. Turn on the power switch while holding down the CHECKING DEVICE switch and the two D keys shown below.

 </td></tr>
<tr><td></td><td colspan="2">When the power swich is turned on, the LED of the CHECKING DEVICE flashes 4 times . The order of the LED flashes corresponds to the Microcomputer (IC) number on the respective P.C.B.s as shown below. If an IC is defective, the corresponding flash time is longer.
Examples
1. CPR (IC1), CPL (IC1) OK
2. CPR (IC1) defective, CPL (IC1) OK


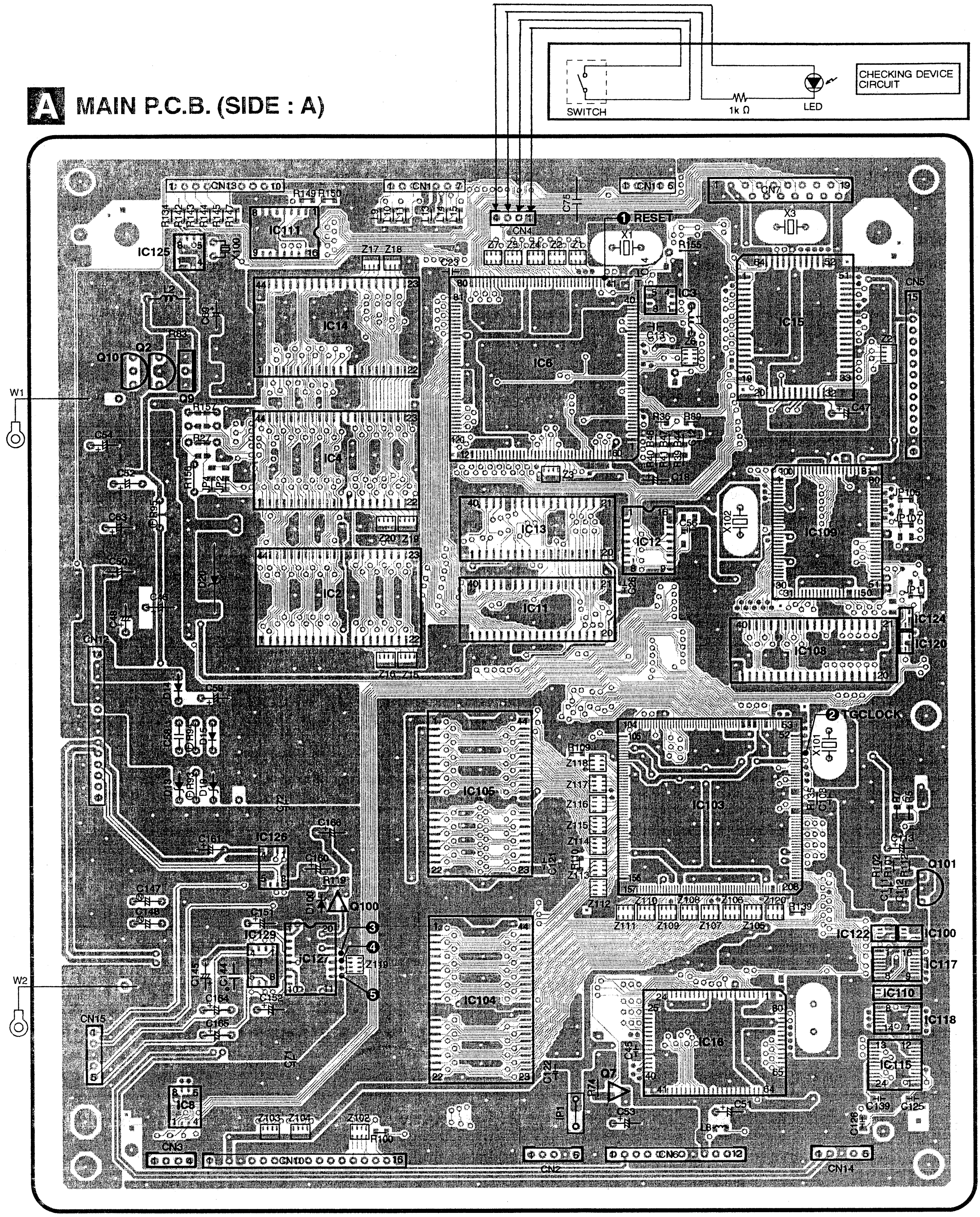
1 2 3 4
● (●) (●) ●
▬ (●) (●) ●
CPR (IC1)
CPL (IC1)
Unassigned

NOTE : ● indicates short flash time
▬ indicates long flash time
* The results of the above test are display on the LCD at the same time as well.</td></tr>
<tr><td>4</td><td>CPR/CPL P.C.B.:
Control Panel switch and LED check</td><td>Turn on the power switch while holding down the two F keys shown below.

 </td></tr>
<tr><td></td><td colspan="2">First, all of the LEDs on the Control Panel will light up simultaneously. Check that they do. Then, press the buttons on the Control Panel and confirm that the corresponding LED lights. For buttons without LEDs, the 4 BEAT display LEDs by the START/STOP button will light up simultaneously.
• To light up all of the LEDs on the Control Panel, press **DEMO** button.</td></tr>
</table>

No.	Diagnostic Part/Diagnostic Device	Procedure of Service Mode
5	MAIN P.C.B.: Wave ROM (IC104-107) check	Turn on the power switch while holding down the two E keys shown below. 
	When set to the self-diagnostic mode, the Wave ROM output a sine wave. The Wave ROMs correspond to the keyboard keys as shown in the diagram to the right. When a key is pressed, the corresponding sine wave sound is produced. If no sound is produced, or if the sound is distored, the Wave ROM corresponding to the key is defective. * A more detailed explanation as to setting conditions and other matters will be displayed on the LCD for your reference.	The key number indicates the Wave ROM number. (①: IC104/105, ②: IC106/107) 
6	MAIN P.C.B.: FDC IC (IC15) test	Turn on the power switch while holding down the two A keys shown below. 
	The test results on the FDC IC will be displayed on the LCD. **NOTE:** This test only checks communications between the FDC IC and MAIN CPU. It does not test operation of the FDC IC itself, the route from the FDC IC to Floppy Disk Drive operation. To include the Floppy Disk Drive in testing, use the "Floppy Disk Drive SAVE/LOAD test" described below.	
7	Floppy Disk Drive: SAVE/LOAD test	1.Insert the floppy disk formatted into the Disk Drive. 2.Turn on the power switch while holding down the two B keys shown below. 
	Pressing the button below the " ▶ " displayed on the LCD starts the Floppy Disk Drive SAVE/LOAD test. The test is carried out repeatedly. Data is saved and loaded, and then the two data sets are compared. The number of times the test results "OK" or "NG" are counted and displayed on the LCD. To stop the test, press the button below the " ■ " displayed on the LCD. Even when the Floppy Disk Drive is functioning properly, the test can result "NG". If this happens frequently, clean the magnetic heads of the Floppy Disk Drive with a cleaning disk. Then, change the disk used in testing with another disk and reperform the test. If the trouble is not solved, it is likely that the Disk Drive unit or some other part of the hardware is broken.	

■ Connection between serving CHECKING DEVICE and MAIN P.C.B.

A MAIN P.C.B. (SIDE : A)



CHECKING DEVICE CIRCUIT
SWITCH
1k Ω
LED
❶ RESET
❷ TGCLOCK
❸
❹
❺
W1
W2
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN10
CN11
CN13
CN14
CN15
IC2
IC3
IC4
IC6
IC8
IC11
IC12
IC13
IC14
IC15
IC16
IC100
IC103
IC104
IC105
IC108
IC109
IC110
IC111
IC115
IC117
IC118
IC120
IC122
IC124
IC125
IC126
IC127
IC129
Q2
Q7
Q9
Q10
Q100
Q101
X1
X3
X101
X102

PRECAUTIONS BEFORE SERVICING

Precautions for measuring of the output waveforms.

1. The waveform was measured with a "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may differ somewhat due to the difference in the timing of triggering.
2. Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform illustration is 1/10 of the actual value (e.g. 0.2 V/cm should be 2.0 V/cm).
3. To measure the waveforms, first set this unit to the self-diagnostic mode (refer to page I-19, No. 5). The Wave ROM output will then be output as a sine wave to facilitate the servicing check.

Important safety notice:

Components identified by a ⚠ mark have special characteristics impotant for safety.
When replacing any of these components, use only manufacture's specified parts.

Symbolic Marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4 WATT, ±5 % TOLERANCE unless otherwise designated in schematic diagrams.

(TABLE-1)

SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)	[F]	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)	[F]	Fuse Type Fixed Carbon File Resistors "FLAME-PROOF" (ERD2FC—type)
Ⓖ	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)		

2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10 % Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capapcitors. (ECEA-type, ±20 % Tolerance)

(TABLE-2)

SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarized Electrolytic Capacitors	ECEA_KN_type
Ⓨ	Non-Polarized Electrolytic (for Network system)	ECEA_Y_type
Ⓣ	Tantalum Solid Electrolytic Capacitors	ECS_type
(TF)	Metalized Plastic Film Capacitors (TF Series)	ECQV_type
○	Temperature Compensating Ceramic Capacitors	ECC_type
	High-Dielectric Constant Ceramic Capacitors	ECK_type ECR_type
	Axial Lead Ceramic Capacitors	ECB_type
	Metalized Polyester Film Capacitors for Across the Line	ECQ_EW_type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES_type
	Multilayer Ceramic Chip Capacitors	ECUV_type

PRECAUTIONS BEFORE SERVICING THE MAIN CIRCUIT

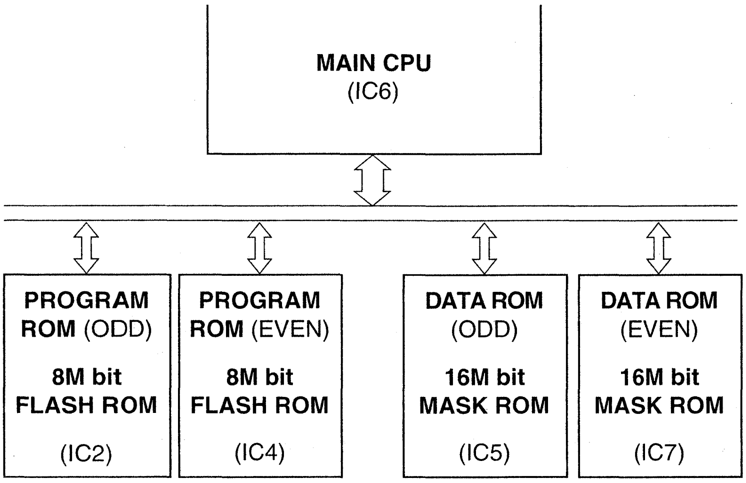
Note: In the initial production (over several months) of this model (Type A), FLASH ROMs (EEPROM) were used for the PROGRAM ROMs. In models produced thereafter (Type B), FLASH ROMs were not used. If changing any of these ICs, service the MAIN CIRCUIT as explained here following.

■ About the FLASH ROM

The FLASH ROM can be electrically erased and rewritten. This model is designed so that the repair technician can easily write and change programs and data in the FLASH ROM, by using a floppy disk.

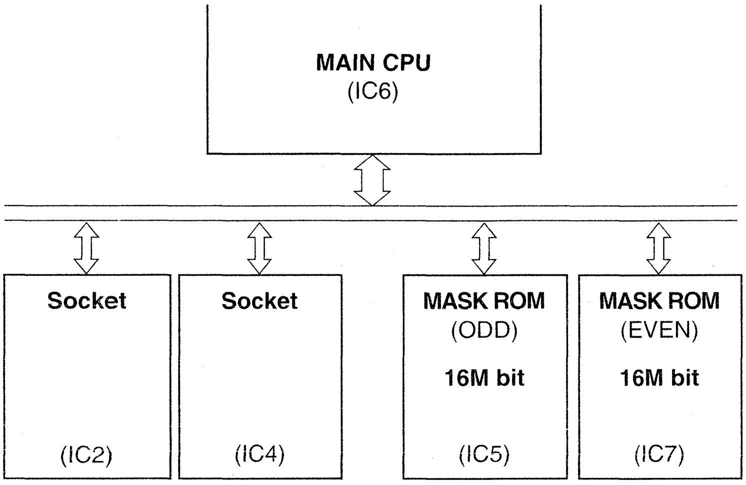
Block Diagram of MAIN CIRCUIT CPU and peripheral ICs

TYPE A


MAIN CPU
(IC6)
PROGRAM ROM (ODD)
8M bit FLASH ROM
(IC2)
PROGRAM ROM (EVEN)
8M bit FLASH ROM
(IC4)
DATA ROM (ODD)
16M bit MASK ROM
(IC5)
DATA ROM (EVEN)
16M bit MASK ROM
(IC7)

* FLASH ROM contents
IC2: MAIN CPU program (ODD)
IC4: MAIN CPU program (EVEN)

TYPE B


MAIN CPU
(IC6)
Socket
(IC2)
Socket
(IC4)
MASK ROM (ODD)
16M bit
(IC5)
MASK ROM (EVEN)
16M bit
(IC7)

■ How to distinguish Type A from Type B

While pressing **PANEL MEMORY** buttons **1**, **2** and **3** at the same time, turn the power on. The model type can be determined from the resulting display.

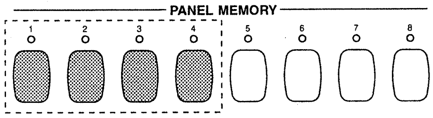
For Type A, "DEVICE=FLASH ROM" is shown on the display.
For Type B, "DEVICE=MASK ROM" is shown on the display.

Notes on replacing FLASH ROMs for Type A

The replacement parts include a FLASH ROM with a available memory and the "PROGRAM DISK" which contains the program to be written into the FLASH ROM. After replacing the FLASH ROM, always write the program into it from the floppy disk included in the replacement parts. For details on programming, see "How to write the program/data to the FLASH ROMs for Type A (or for Type B in which the FLASH ROMs has been installed in the sockets" below.

How to write the program/data to the FLASH ROMs for Type A (or for Type B in which the FLASH ROMs has been installed in the sockets)

① Load the "PROGRAM DISK" included in the replacement parts into the Floppy Disk Drive.
② Hold down the **PANEL MEMORY** buttons **1**, **2**, **3** and **4**, and turn on the power switch.
③ Check "Flash Memory Update" is displayed on the LCD. Only then, release the **PANEL MEMORY** buttons.
The program will be written into the FLASH ROM automatically.



④ When the operation is complete, "Completed!!" will be displayed on the LCD. Turn the power switch off and then back on again. Check the instrument is functioning properly.

How to write the program for Type B

Follow the steps below to write the program for Type B model in which the FLASH ROMs have not been installed.
① Install the FLASH ROMs in the unused sockets.
② Change the jumper wire settings as follows:
Discontinued: JP5, JP8, JP10
Added: JP6, JP7, JP9
③ Write the program/data in the same manner as for Type A, above.

MIDI IMPLEMENTATION CHART

Digital Ensemble [SX-PR702/PR702M] **(Transmitted)**

Function		RIGHT1,2,LEFT, PART4~15	PART16	ACMP1	ACMP2,3	BASS	DRUMS	CHORD	CONTROL	Remarks
Basic Channel	Default	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	memorized
	Changed	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF,POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	–	–	–	–	–	–	–	–	
Note Number		0-119	0-127	0-119	0-119	0-119	0-127	0-119	–	Changes depending on the position of the transpose control,octave shift,and drums type.
	True voice	–	–	–	–	–	–	–	–	
Velocity	Note ON	○	○	○	○	○	○	○	–	
	Note OFF	×	×	×	×	×	×	×	–	
After Touch	Key's	×	×	×	×	×	×	×	–	Transmitted during SEQUENCER playback.
	Ch's	○×*	×	×	×	×	×	×	–	
Pitch Bend		○×*	×	○×*	○×*	○×*	×	○×*	×	Transmitted during SEQUENCER playback and during rhythm performance.
Control Change	0,32	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	bank select MSB, LSB
	1	○×*	×	○×*	○×*	○×*	×	○×*	×	modulation
	6,38	○×*	×	×	×	×	×	×	×	data entry MSB, LSB
	7	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	volume
	10	○×*	×	○×*	○×*	○×*	×	×	×	panpot
	11	○×*	○×*	○×*	○×*	○×*	○×*	×	×	expression
	64	○×*	×	○×*	○×*	○×*	×	×	×	sustain
	66	○	×	×	×	×	×	×	×	sostenuto
	67	○	×	×	×	×	×	×	×	soft
	80	×	×	○×*	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	○×*	×	×	intro, fill in, ending
	83	×	×	×	×	×	×	×	○×*	fade in/out
	91	○×*	○×*	○×*	○×*	○×*	○×*	○×*	○×*	reverb
	93	○×*	○×*	×	×	×	×	×	×	DSP effect
	94	○×*	×	○×*	○×*	○×*	×	○×*	×	digital effect
	95	○×*	○×*	×	×	×	×	×	○×*	piano ambience
	100,101	○×*	×	×	×	×	×	×	×	RPN LSB, MSB
	120	○	○	×	×	×	×	×	×	all sound off
	121	○×*	○×*	×	×	×	×	×	×	reset all cotrollers
Prog Change		○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	Changes depending on program change mode and prog.cng to p.mem.
	True #	–	–	–	–	–	–	–	–	
System exclusive		○								
System common	Song Pos	○×*								
	Song Sel	○×* (0-19)								
	Tune	×								
System Real Time	Clock	○								
	Commands	○×*								start/stop,continue
Aux Messages	Local ON/ OFF	×	×	×	×	×	×	×	–	
	All notes OFF	×	×	×	×	×	×	×	–	
	Active Sense	○								
	Reset	×								
Notes		○×*…………Whether or not the data for each of these items is transmitted can be set.								

Mode 1: OMNI ON, POLY　Mode 2: OMNI ON, MONO　○:Yes
Mode 3: OMNI OFF, POLY　Mode 4: OMNI OFF, MONO　×:No

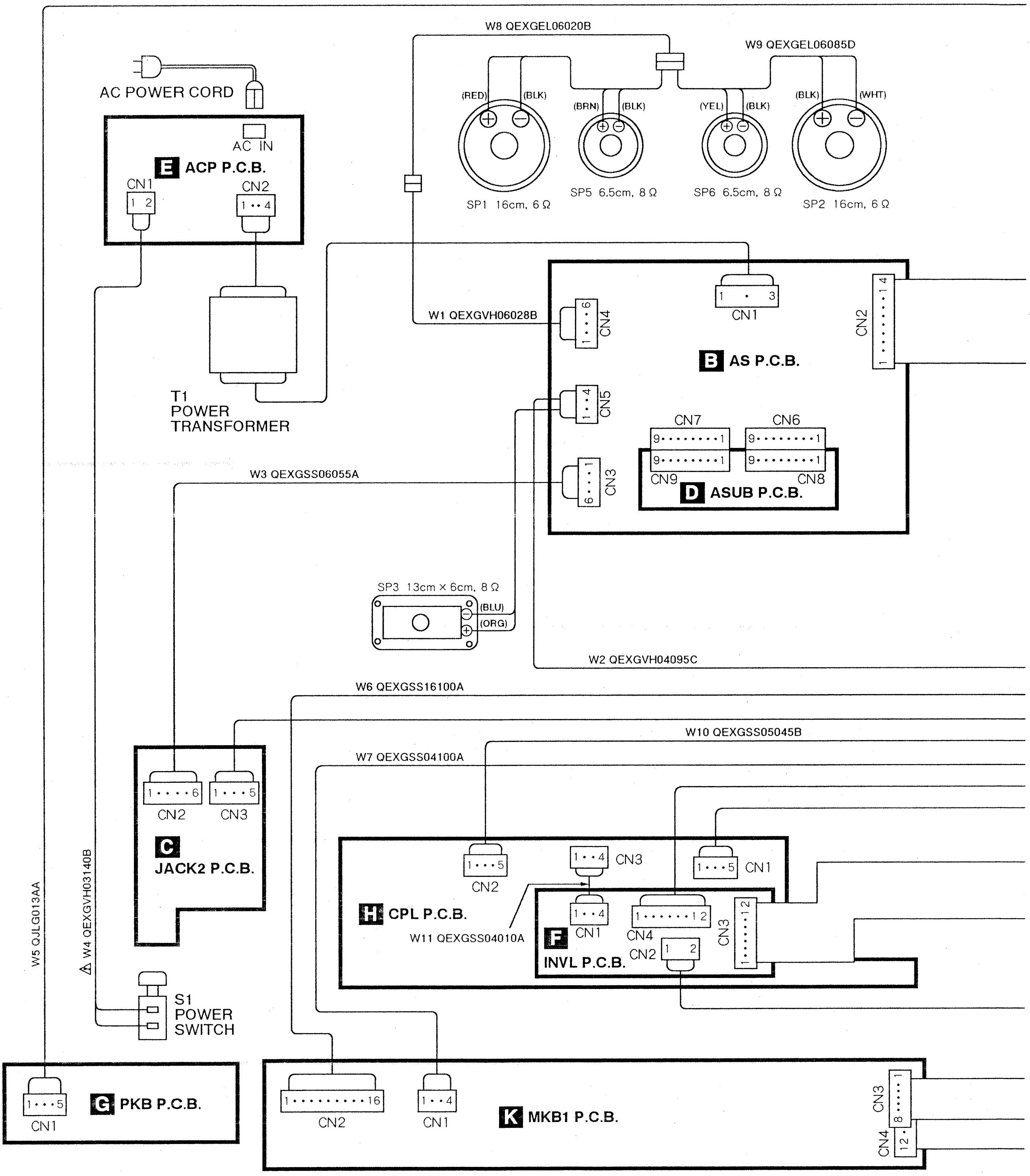
Digital Ensemble [SX-PR702/PR702M] **(Recognized)**

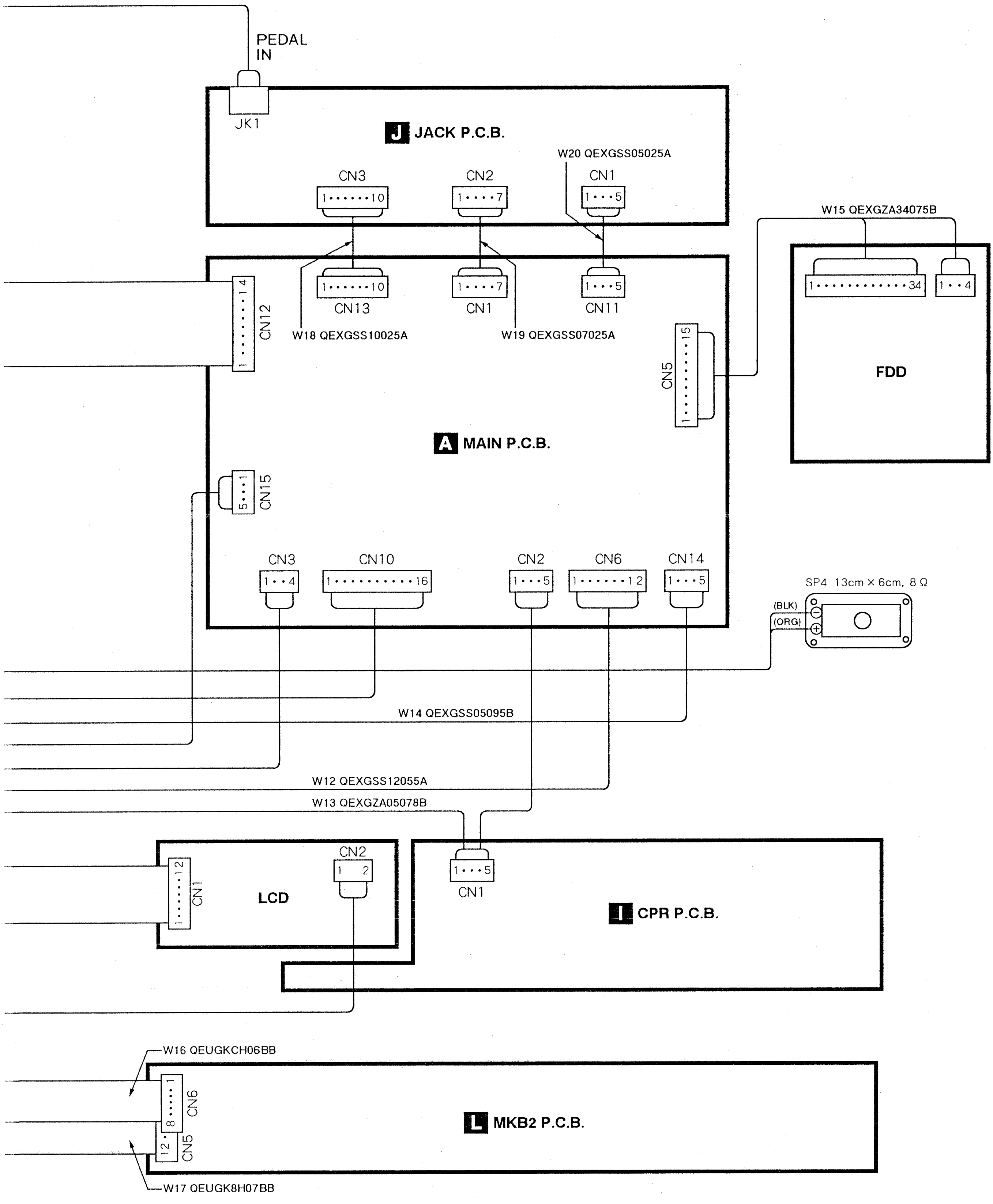
Function		RIGHT1,2,LEFT, PART4~15	PART16	ACMP1	ACMP2,3	BASS	DRUMS	CHORD	CONTROL	Remarks
Basic Channel	Default	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	memorized
	Changed	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF,POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	–	–	–	–	–	–	–	–	
Note Number		0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	Changes depending on the position of the transpose control,octave shift, and drums type.
	True voice	0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	
Velocity	Note ON	○	○	○	○	○	○	○	–	
	Note OFF	×	×	×	×	×	×	×	–	
After Touch	Key's	×	×	×	×	×	×	×	–	
	Ch's	○×*	×	×	×	×	×	×	–	
Pitch Bend		○×*	×	○×*	○×*	○×*	×	○×*	×	
Control Change	0,32	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	bank select MSB, LSB
	1	○×*	×	○×*	○×*	○×*	×	○×*	×	modulation
	6,38	○×*	×	×	×	×	×	×	×	data entry MSB, LSB
	7	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	volume
	10	○×*	×	○×*	○×*	○×*	×	×	×	panpot
	11	○×*	○×*	○×*	○×*	○×*	○×*	×	×	expression
	64	○×*	×	○×*	○×*	○×*	×	×	×	sustain
	66	○	×	×	×	×	×	×	×	sostenuto
	67	○	×	×	×	×	×	×	×	soft
	80	×	×	○×*	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	○×*	×	×	intro, fill in, ending
	83	×	×	×	×	×	×	×	○×*	fade in/out
	91	○×*	○×*	○×*	○×*	○×*	○×*	○×*	○×*	reverb
	93	○×*	○×*	×	×	×	×	×	×	DSP effect
	94	○×*	×	○×*	○×*	○×*	×	○×*	×	digital effect
	95	○×*	○×*	×	×	×	×	×	○×*	piano ambience
	100,101	○×*	×	×	×	×	×	×	×	RPN LSB, MSB
	120	○	○	○	○	○	○	○	×	all sound off
	121	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	reset all cotrollers
Prog Change		○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	Changes depending on program change mode and prog.cng to p.mem.
	True #	0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	
System exclusive		○								
System common	Song Pos	○×*								
	Song Sel	○×* (0-19)								
	Tune	×								
System Real Time	Clock	○								
	Commands	○×*								start/stop,continue
Aux Messages	Local ON/ OFF	×	×	×	×	×	×	×	–	
	All notes OFF	○	○	○	○	○	○	○	–	
	Active Sense	○								
	Reset	×								
Notes		○×*…………Whether or not the data for each of these items is received can be set.								

Mode 1:	OMNI ON, POLY	Mode 2:	OMNI ON, MONO
Mode 3:	OMNI OFF, POLY	Mode 4:	OMNI OFF, MONO

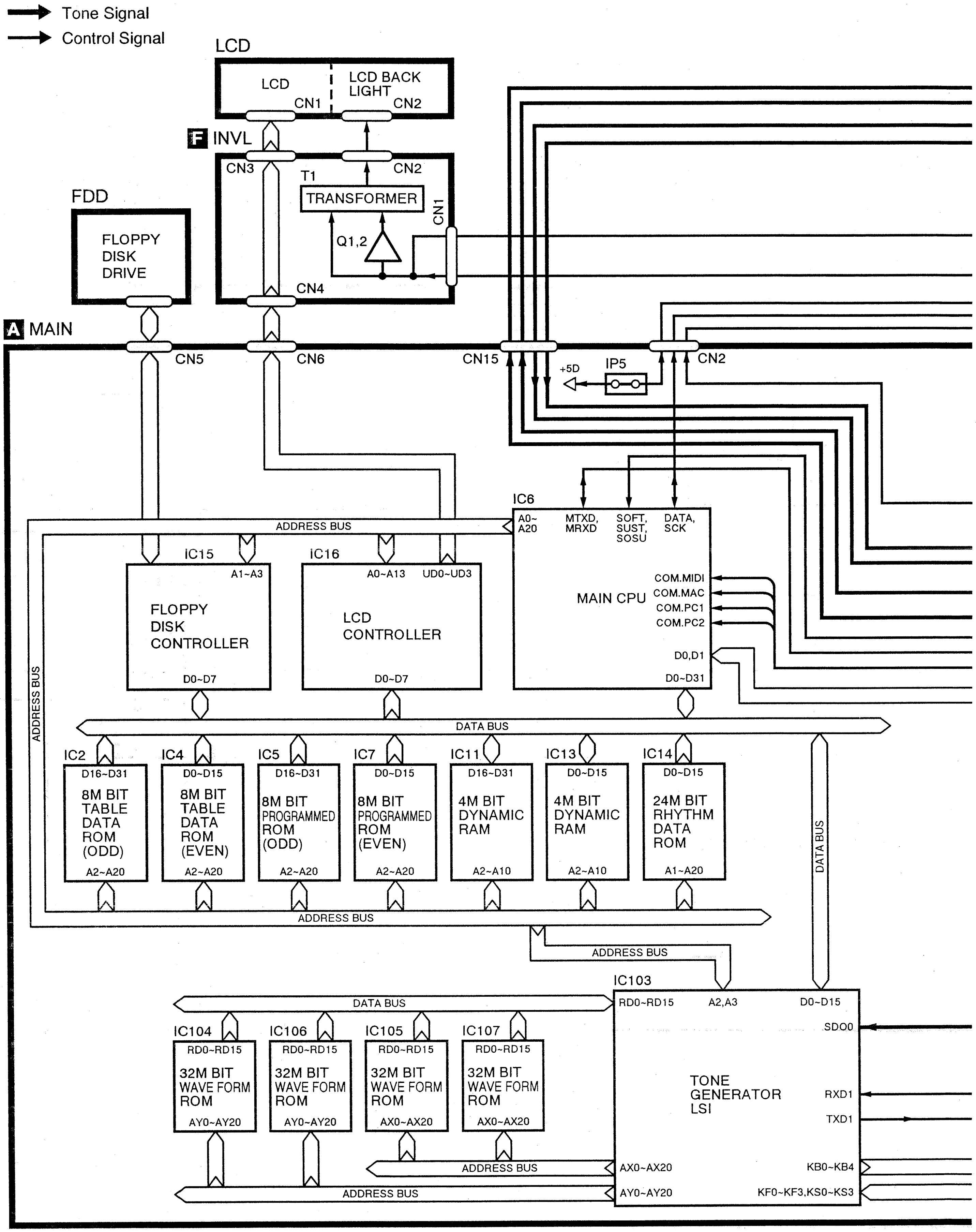
○:Yes
×:No

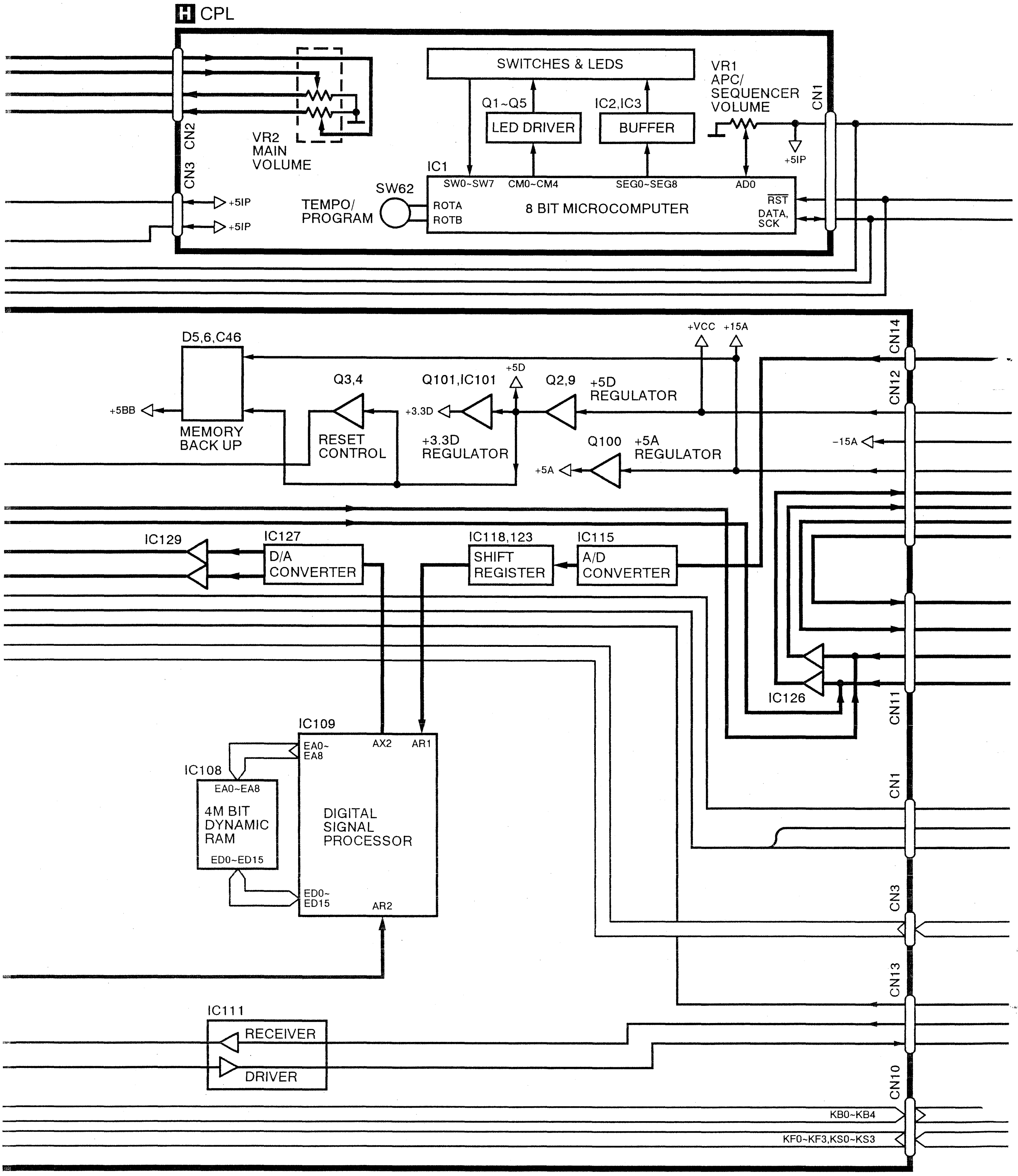
■WIRING CONNECTION Diagram

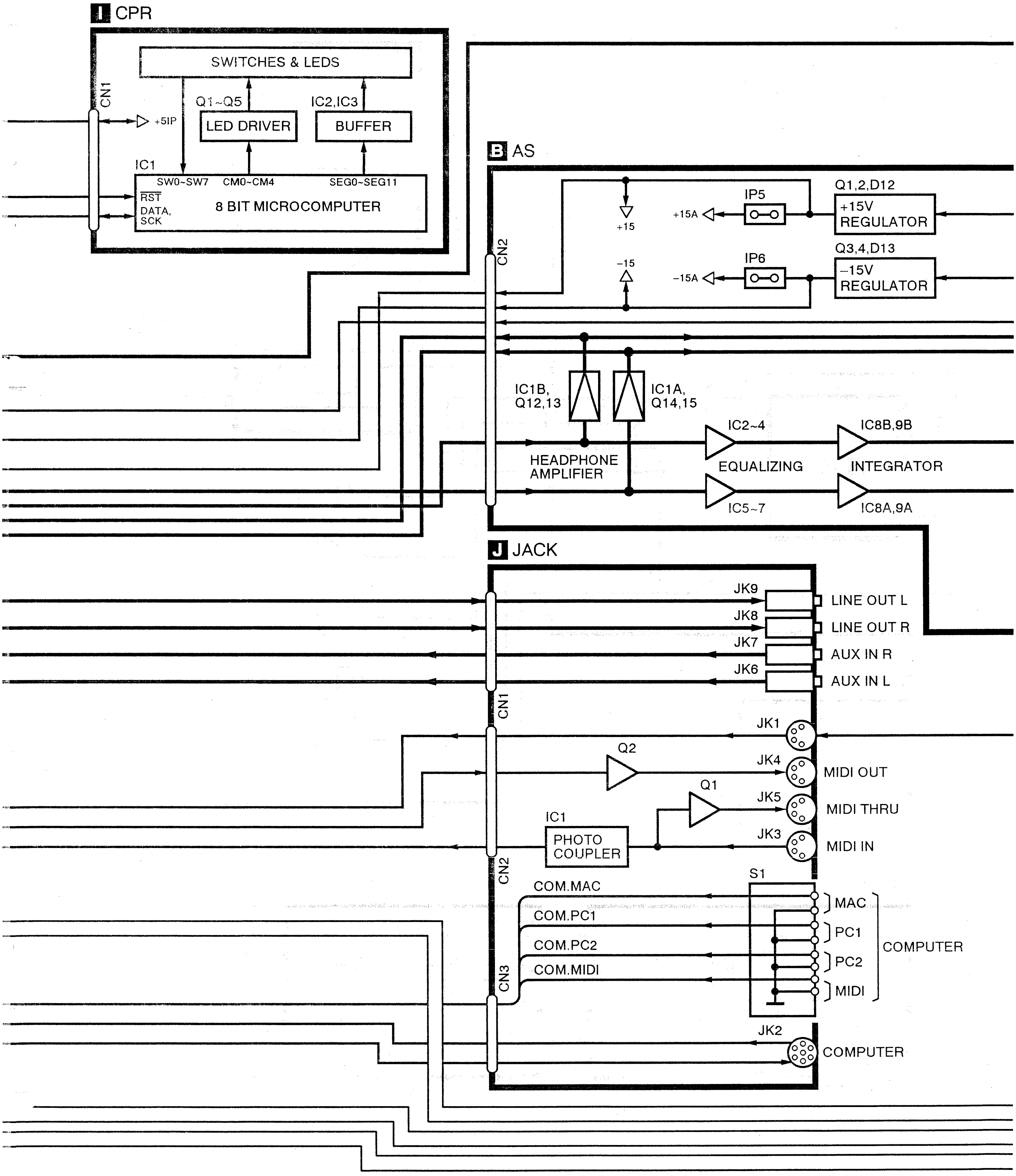

W8 QEXGEL06020B
W9 QEXGEL06085D
AC POWER CORD
(RED)
(BLK)
(BRN)
(BLK)
(YEL)
(BLK)
(BLK)
(WHT)
AC IN
E ACP P.C.B.
CN1
1 2
CN2
1 •• 4
SP1 16cm, 6 Ω
SP5 6.5cm, 8 Ω
SP6 6.5cm, 8 Ω
SP2 16cm, 6 Ω
1 • 3
CN1
1 • • • 14
CN2
W1 QEXGVH06028B
1 • • • 6
CN4
B AS P.C.B.
T1
POWER
TRANSFORMER
1 • • 4
CN5
CN7
CN6
9 • • • • • • • • 1
9 • • • • • • • • 1
9 • • • • • • • • 1
9 • • • • • • • • 1
CN9
CN8
D ASUB P.C.B.
W3 QEXGSS06055A
1 • • • 6
CN3
SP3 13cm × 6cm, 8 Ω
(BLU)
(ORG)
W2 QEXGVH04095C
W6 QEXGSS16100A
W10 QEXGSS05045B
W7 QEXGSS04100A
1 • • • • • 6
1 • • • 5
CN2
CN3
C
JACK2 P.C.B.
W5 QJLG013AA
⚠ W4 QEXGVH03140B
1 • • • 5
CN2
1 • • 4
CN3
1 • • • 5
CN1
H CPL P.C.B.
W11 QEXGSS04010A
1 • • 4
CN1
1 • • • • • • • 12
CN4
1 2
CN2
1 • • • • • • 12
CN3
F
INVL P.C.B.
S1
POWER
SWITCH
1 • • • 5
CN1
G PKB P.C.B.
1 • • • • • • • • • • 16
CN2
1 • • 4
CN1
K MKB1 P.C.B.
1 • • • • • 8
CN3
12 •
CN4

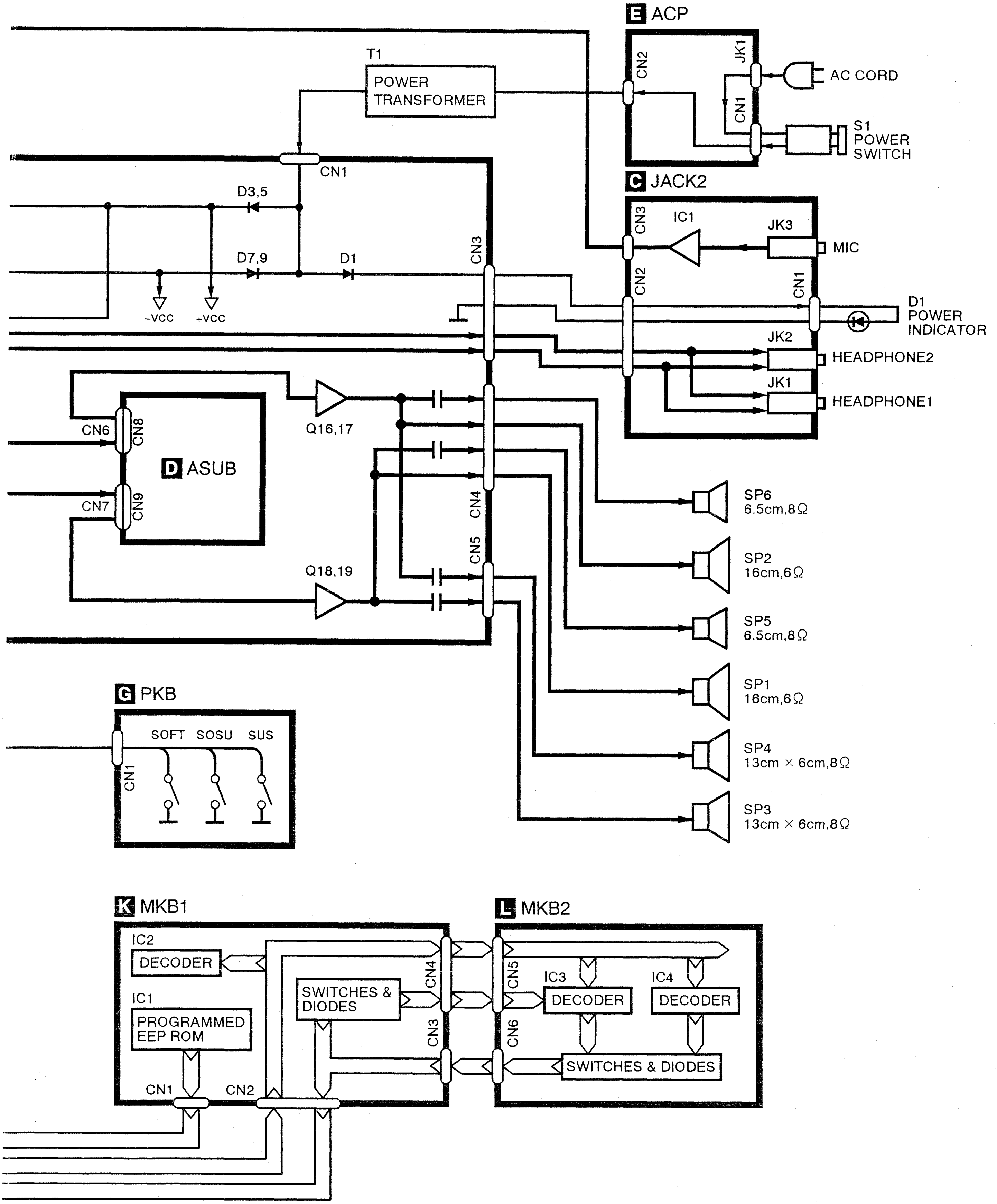

PEDAL
IN
JK1
J JACK P.C.B.
W20 QEXGSS05025A
CN3
1•••••••10
CN2
1••••7
CN1
1•••5
W15 QEXGZA34075B
1••••••••••••34
1••4
FDD
1•••••••••14
CN12
1•••••••10
CN13
1••••7
CN1
1•••5
CN11
W18 QEXGSS10025A
W19 QEXGSS07025A
CN5
1•••••••••15
A MAIN P.C.B.
5•••1
CN15
CN3
1••4
CN10
1••••••••••••16
CN2
1•••5
CN6
1•••••••12
CN14
1•••5
SP4 13cm × 6cm, 8 Ω
(BLK)
(ORG)
W14 QEXGSS05095B
W12 QEXGSS12055A
W13 QEXGZA05078B
CN2
1 2
1••••••12
CN1
LCD
1•••5
CN1
I CPR P.C.B.
W16 QEUGKCH06BB
1•••••8
CN6
12•
CN5
L MKB2 P.C.B.
W17 QEUGK8H07BB

■BLOCK Diagram


Tone Signal
Control Signal
LCD
LCD
LCD BACK LIGHT
CN1
CN2
F INVL
CN3
CN2
T1
TRANSFORMER
CN1
Q1,2
CN4
FDD
FLOPPY DISK DRIVE
A MAIN
CN5
CN6
CN15
+5D
IP5
CN2
IC6
A0~A20
MTXD, MRXD
SOFT, SUST, SOSU
DATA, SCK
MAIN CPU
COM.MIDI
COM.MAC
COM.PC1
COM.PC2
D0,D1
D0~D31
ADDRESS BUS
IC15
A1~A3
FLOPPY DISK CONTROLLER
D0~D7
IC16
A0~A13
UD0~UD3
LCD CONTROLLER
D0~D7
ADDRESS BUS
DATA BUS
IC2
D16~D31
8M BIT TABLE DATA ROM (ODD)
A2~A20
IC4
D0~D15
8M BIT TABLE DATA ROM (EVEN)
A2~A20
IC5
D16~D31
8M BIT PROGRAMMED ROM (ODD)
A2~A20
IC7
D0~D15
8M BIT PROGRAMMED ROM (EVEN)
A2~A20
IC11
D16~D31
4M BIT DYNAMIC RAM
A2~A10
IC13
D0~D15
4M BIT DYNAMIC RAM
A2~A10
IC14
D0~D15
24M BIT RHYTHM DATA ROM
A1~A20
DATA BUS
ADDRESS BUS
ADDRESS BUS
IC103
RD0~RD15
A2,A3
D0~D15
SDO0
TONE GENERATOR LSI
RXD1
TXD1
AX0~AX20
KB0~KB4
AY0~AY20
KF0~KF3,KS0~KS3
DATA BUS
IC104
RD0~RD15
32M BIT WAVE FORM ROM
AY0~AY20
IC106
RD0~RD15
32M BIT WAVE FORM ROM
AY0~AY20
IC105
RD0~RD15
32M BIT WAVE FORM ROM
AX0~AX20
IC107
RD0~RD15
32M BIT WAVE FORM ROM
AX0~AX20
ADDRESS BUS
ADDRESS BUS

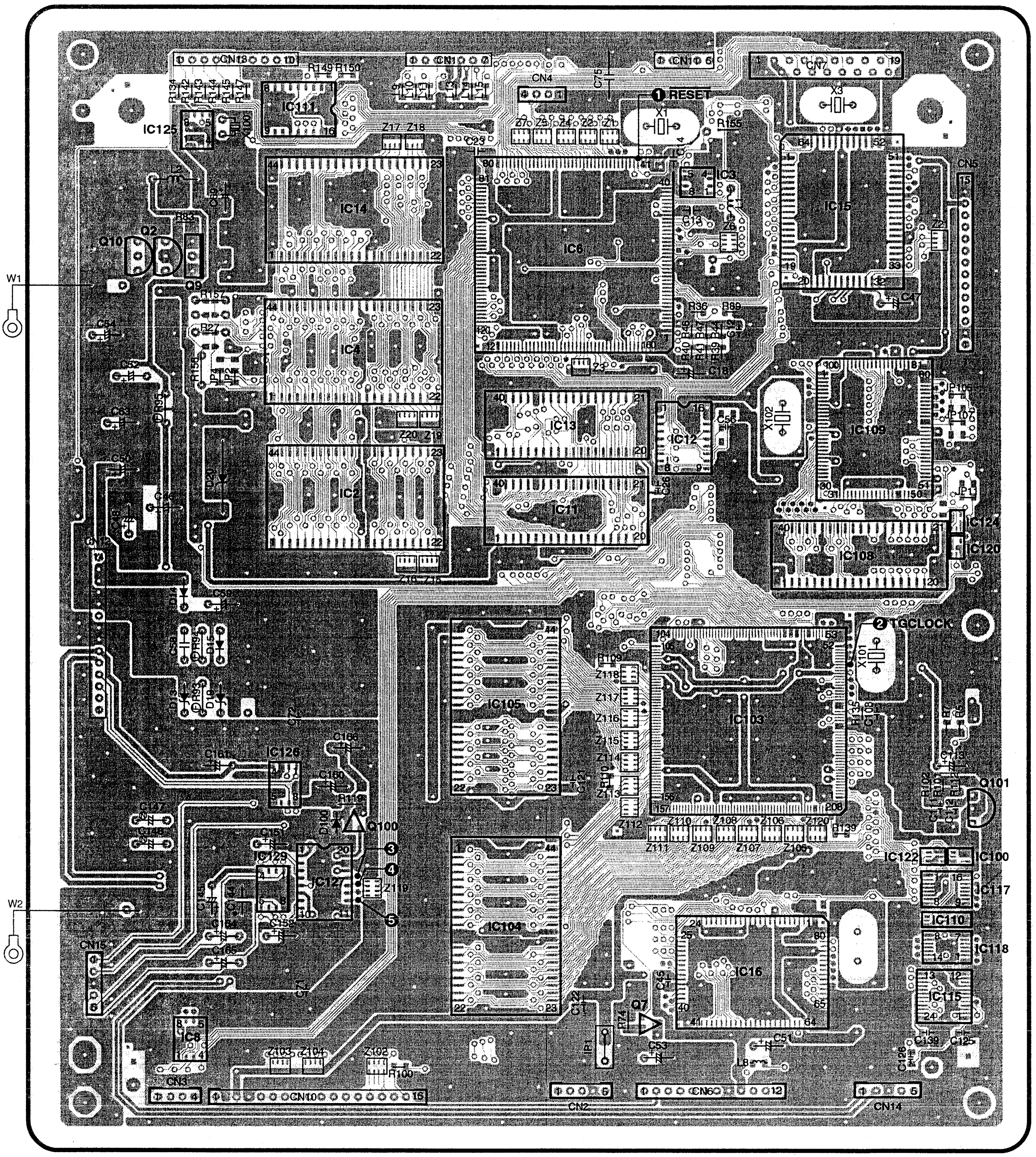

H CPL
SWITCHES & LEDS
VR1
APC/
SEQUENCER
VOLUME
CN1
Q1~Q5
IC2,IC3
LED DRIVER
BUFFER
VR2
MAIN
VOLUME
CN2
CN3
+5IP
+5IP
+5IP
IC1
SW0~SW7
CM0~CM4
SEG0~SEG8
AD0
SW62
TEMPO/
PROGRAM
ROTA
ROTB
8 BIT MICROCOMPUTER
RST
DATA,
SCK
+VCC
+15A
CN14
D5,6,C46
+5D
Q3,4
Q101,IC101
Q2,9
+5D
REGULATOR
CN12
+5BB
+3.3D
MEMORY
BACK UP
RESET
CONTROL
+3.3D
REGULATOR
Q100
+5A
REGULATOR
−15A
+5A
IC129
IC127
D/A
CONVERTER
IC118,123
SHIFT
REGISTER
IC115
A/D
CONVERTER
IC126
CN11
IC109
EA0~
EA8
AX2
AR1
IC108
EA0~EA8
4M BIT
DYNAMIC
RAM
ED0~ED15
DIGITAL
SIGNAL
PROCESSOR
ED0~
ED15
AR2
CN1
CN3
CN13
IC111
RECEIVER
DRIVER
CN10
KB0~KB4
KF0~KF3,KS0~KS3


I CPR
SWITCHES & LEDS
CN1
+5IP
Q1~Q5
LED DRIVER
IC2,IC3
BUFFER
IC1
SW0~SW7
CM0~CM4
SEG0~SEG11
RST
DATA,
SCK
8 BIT MICROCOMPUTER
B AS
CN2
+15
IP5
+15A
Q1,2,D12
+15V
REGULATOR
−15
IP6
−15A
Q3,4,D13
−15V
REGULATOR
IC1B,
Q12,13
IC1A,
Q14,15
IC2~4
IC8B,9B
HEADPHONE
AMPLIFIER
EQUALIZING
INTEGRATOR
IC5~7
IC8A,9A
J JACK
JK9
LINE OUT L
JK8
LINE OUT R
JK7
AUX IN R
JK6
AUX IN L
CN1
JK1
Q2
JK4
MIDI OUT
Q1
JK5
MIDI THRU
IC1
PHOTO
COUPLER
JK3
MIDI IN
CN2
S1
COM.MAC
MAC
COM.PC1
PC1
COM.PC2
PC2
COMPUTER
COM.MIDI
MIDI
CN3
JK2
COMPUTER


E ACP
CN2
JK1
CN1
AC CORD
S1
POWER
SWITCH
T1
POWER
TRANSFORMER
CN1
D3,5
D7,9
D1
-VCC
+VCC
CN3
C JACK2
CN3
IC1
JK3
MIC
CN2
CN1
D1
POWER
INDICATOR
JK2
HEADPHONE2
JK1
HEADPHONE1
CN6
CN8
D ASUB
CN7
CN9
Q16,17
Q18,19
CN4
CN5
SP6
6.5cm,8Ω
SP2
16cm,6Ω
SP5
6.5cm,8Ω
SP1
16cm,6Ω
SP4
13cm × 6cm,8Ω
SP3
13cm × 6cm,8Ω
G PKB
CN1
SOFT
SOSU
SUS
K MKB1
IC2
DECODER
IC1
PROGRAMMED
EEP ROM
SWITCHES &
DIODES
CN4
CN3
CN1
CN2
L MKB2
CN5
CN6
IC3
DECODER
IC4
DECODER
SWITCHES & DIODES

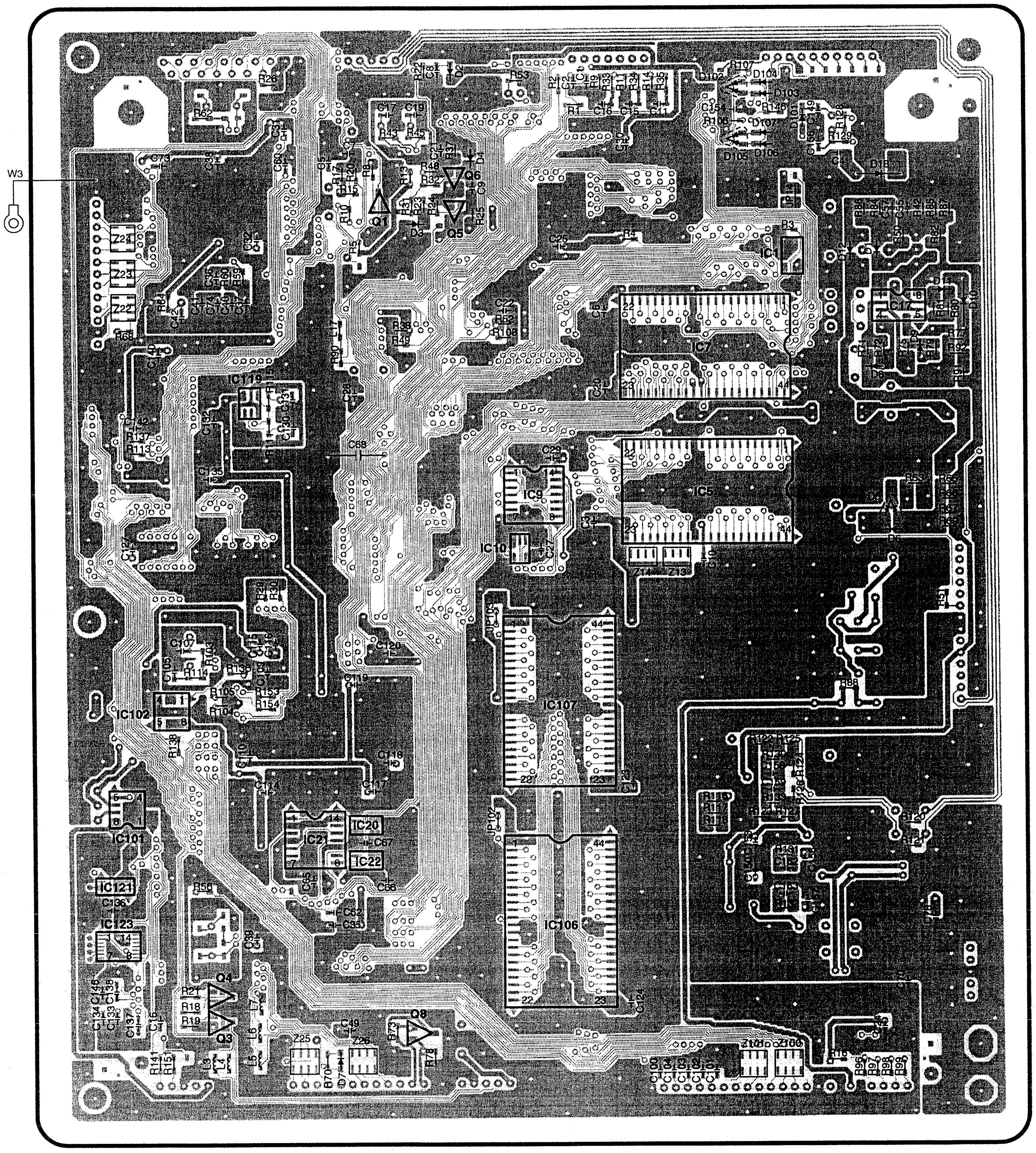
■Printed Circuit Board and Schematic Diagram

A MAIN P.C.B. (SIDE : A)



CN18
R149
R150
CN11
CN4
C75
CN16
CN7
IC111
IC125
Z17
Z18
C23
❶ RESET
X1
R155
X3
IC14
IC6
IC3
IC15
CN5
Q10
Q2
Q9
R93
W1
R157
IC4
C47
R36
R89
C18
IC13
IC12
X102
IC109
Z20
Z19
IC2
IC11
IC124
IC120
IC108
Z16
Z15
❷ 1GCLOCK
IC105
R109
Z118
Z117
Z116
Z115
Z114
Z113
Z112
Z111
Z110
Z109
Z108
Z107
Z106
Z105
Z120
R139
IC103
X101
Q101
IC126
C166
C167
C160
R113
D100
Q100
❸
❹
❺
IC129
IC127
Z119
IC122
IC100
IC117
IC110
IC118
W2
CN15
IC104
IC16
Q7
R74
C53
C51
L8
IC115
C139
C125
C126
IC8
Z103
Z104
Z102
R100
CN3
CN10
CN2
CN6
CN14

A MAIN P.C.B. (SIDE : B)

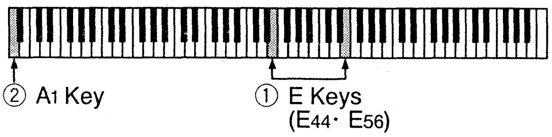

W3
IC1
IC5
IC7
IC9
IC10
IC20
IC21
IC22
IC101
IC102
IC106
IC107
IC119
IC121
IC123
Q1
Q3
Q4
Q5
Q6
Q8
Z13
Z14
Z22
Z23
Z24
Z25
Z26
Z100
Z101

■ Measuring Condition of MAIN P.C.B.

Check Point ❸~❺

Set to the self-diagnostic mode followings.

- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND .... SYNTH
- Main Volume .... MAX
- Keyboard.. A_1 (②)

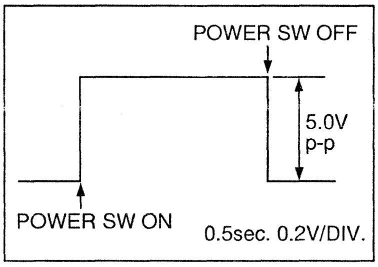


Check Point ❶

Set the initial setting mode (Refer to page I-5)

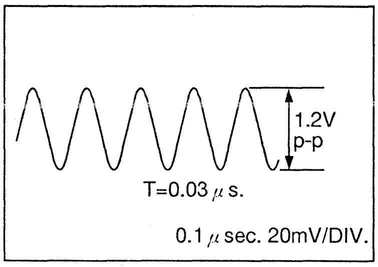
- SOUND .... SYNTH
- Main Volume .... MAX

❶ RESET

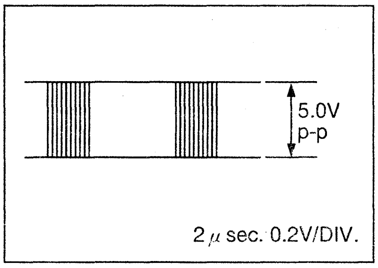


- Power SW .... ON → OFF

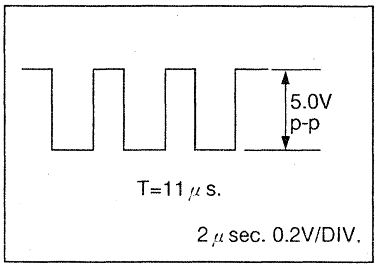
❷ TG CLOCK



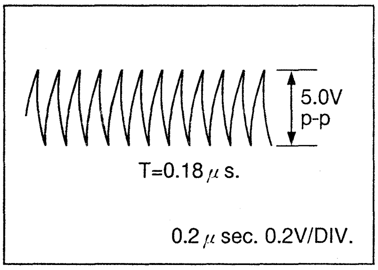
❸



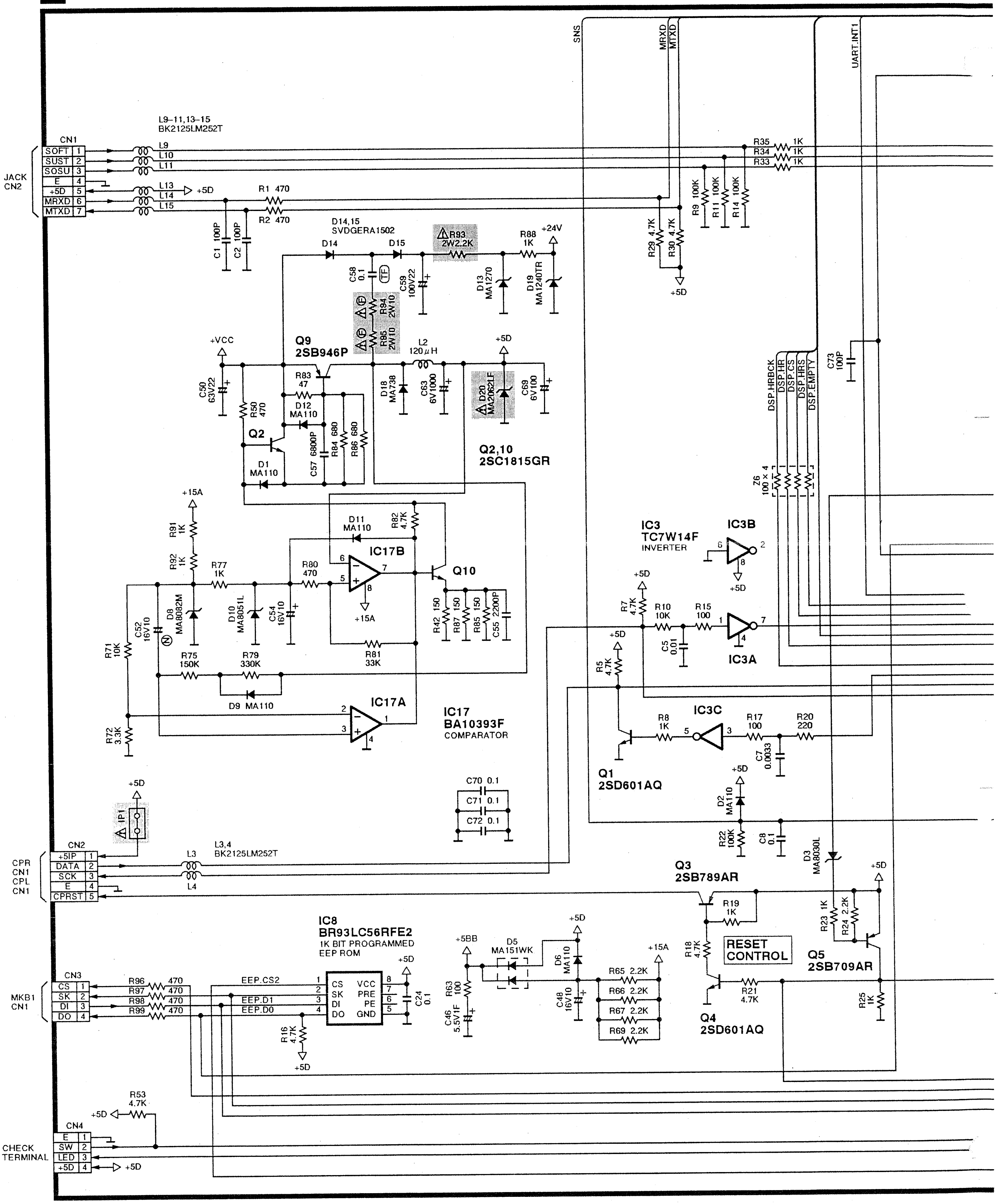
❹



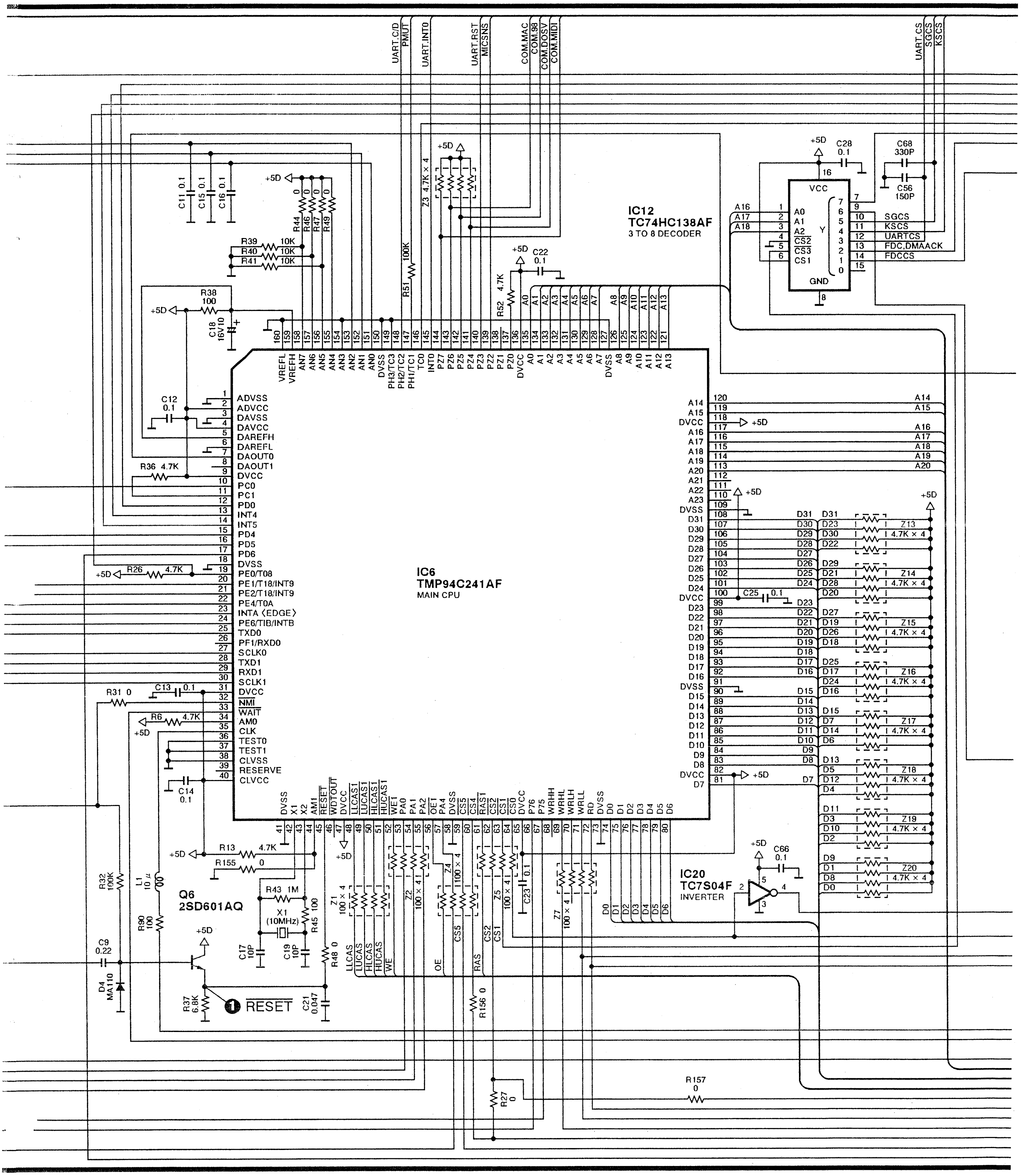
❺

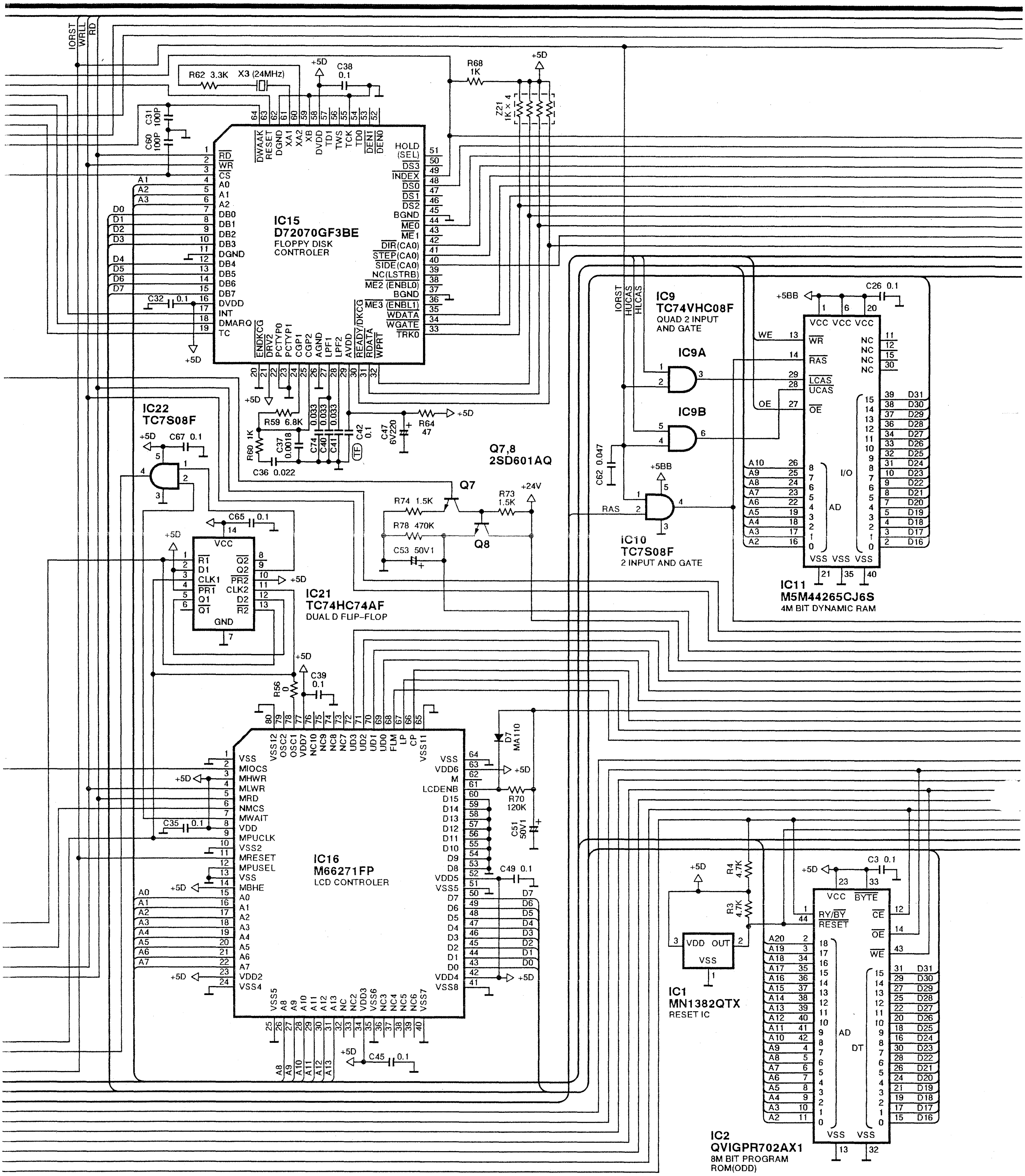


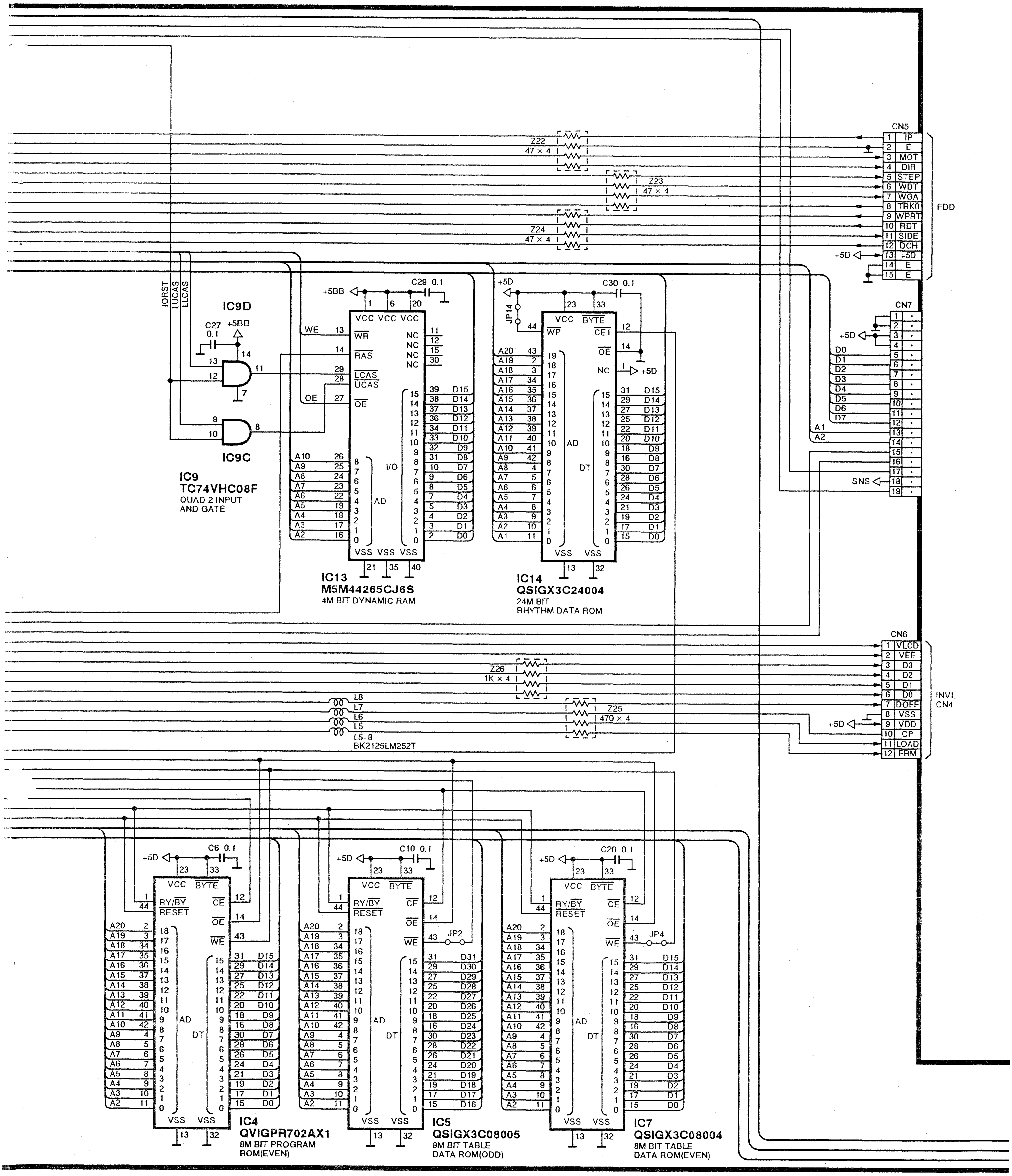
A MAIN CIRCUIT

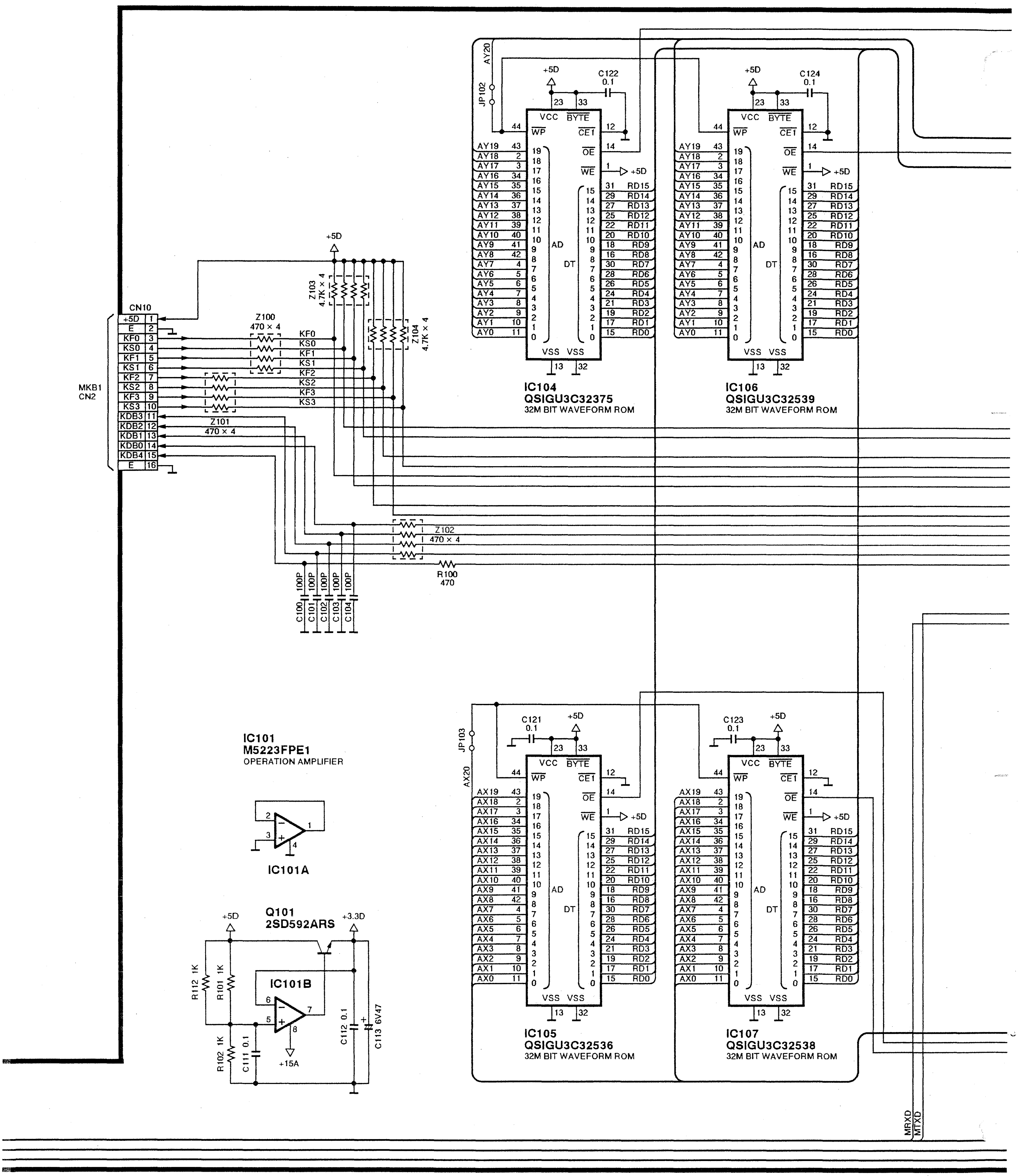


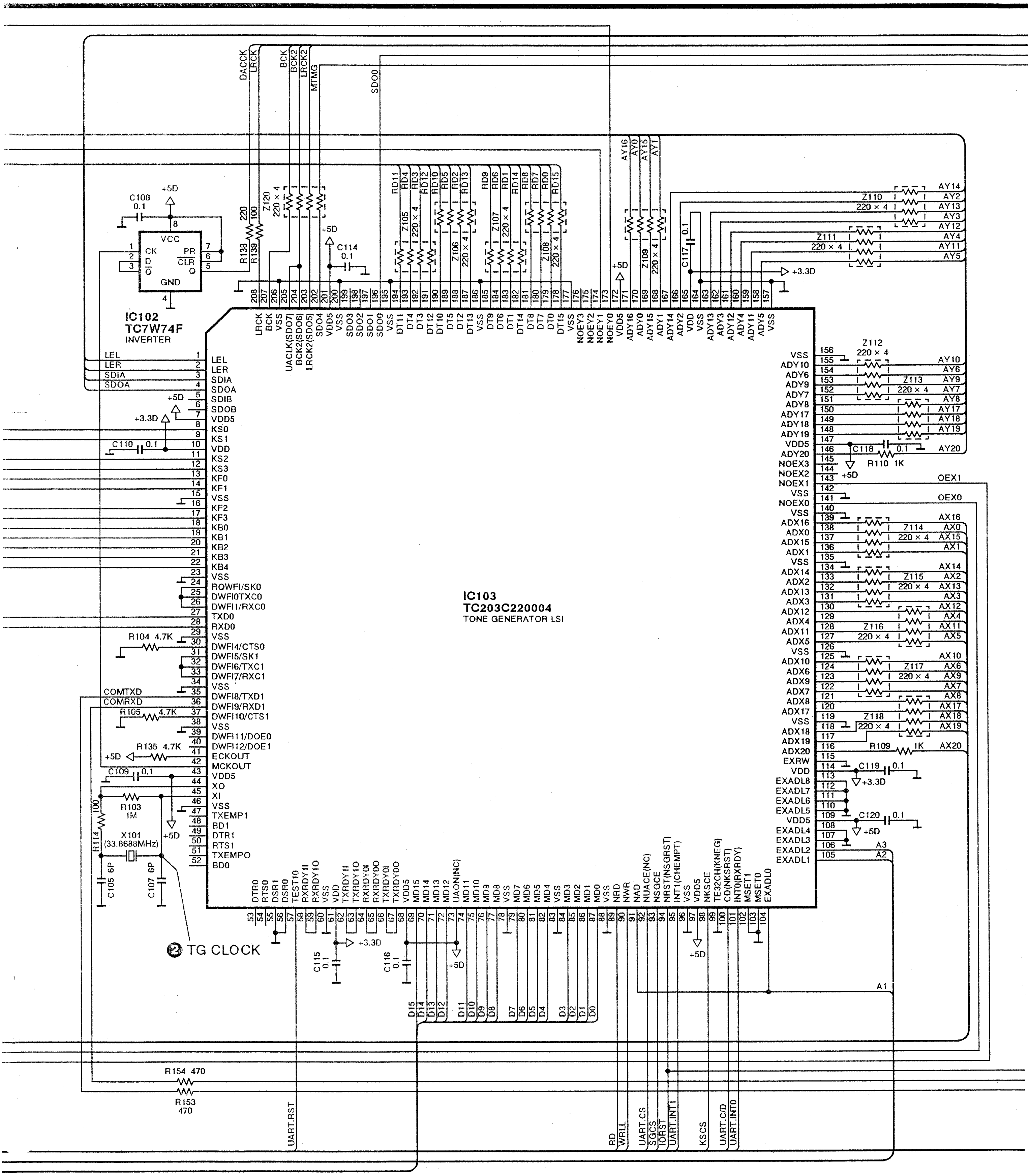
SNS
MRXD
MTXD
UART.INT1
L9–11,13–15
BK2125LM252T
CN1
JACK
CN2
SOFT 1
SUST 2
SOSU 3
E 4
+5D 5
MRXD 6
MTXD 7
L9
L10
L11
L13
L14
L15
+5D
R1 470
R2 470
C1 100P
C2 100P
R35 1K
R34 1K
R33 1K
R9 100K
R11 100K
R14 100K
R29 4.7K
R30 4.7K
+5D
D14,15
SVDGERA1502
D14
D15
R93
2W2.2K
R88
1K
+24V
C58
0.1
TF
C59
100V22
D13
MA1270
D19
MA1240TR
R94
2W10
R95
2W10
+VCC
Q9
2SB946P
L2
120µH
+5D
C50
63V22
R83
47
D12
MA110
D18
MA738
C63
6V1000
D20
MA2062LF
C69
6V100
R50
470
Q2
C57 6800P
R84 680
R86 680
D1
MA110
Q2,10
2SC1815GR
DSP.HRBCK
DSP.HR
DSP.CS
DSP.HRS
DSP.EMPTY
C73
100P
Z6
100 × 4
+15A
R91
1K
D11
MA110
R82
4.7K
IC17B
R92
1K
R77
1K
R80
470
Q10
D8
MA8082M
D10
MA8051L
C54
16V10
+15A
R42 150
R87 150
R85 150
C55 2200P
C52
16V10
R71
10K
R81
33K
R75
150K
R79
330K
D9 MA110
IC17A
IC17
BA10393F
COMPARATOR
R72
3.3K
IC3
TC7W14F
INVERTER
IC3B
+5D
R7
4.7K
R10
10K
R15
100
C5
0.01
IC3A
+5D
R5
4.7K
R8
1K
IC3C
R17
100
R20
220
C7
0.0033
Q1
2SD601AQ
+5D
D2
MA110
R22
100K
C8
0.1
C70 0.1
C71 0.1
C72 0.1
+5D
IP1
CN2
CPR CN1
CPL CN1
+5IP 1
DATA 2
SCK 3
E 4
CPRST 5
L3
L3,4
BK2125LM252T
L4
D3
MA8030L
Q3
2SB789AR
+5D
R19
1K
R23 1K
R24 2.2K
RESET CONTROL
R18
4.7K
Q5
2SB709AR
IC8
BR93LC56RFE2
1K BIT PROGRAMMED
EEP ROM
+5D
+5BB
D5
MA151WK
D6
MA110
+15A
R65 2.2K
R66 2.2K
R67 2.2K
R69 2.2K
C48
16V10
R63
100
C46
5.5V1F
R21
4.7K
Q4
2SD601AQ
R25
1K
CN3
MKB1
CN1
CS 1
SK 2
DI 3
DO 4
R96 470
R97 470
R98 470
R99 470
EEP.CS2
EEP.D1
EEP.D0
CS
SK
DI
DO
VCC
PRE
PE
GND
C24
0.1
R16
4.7K
+5D
R53
4.7K
+5D
CN4
CHECK TERMINAL
E 1
SW 2
LED 3
+5D 4
+5D

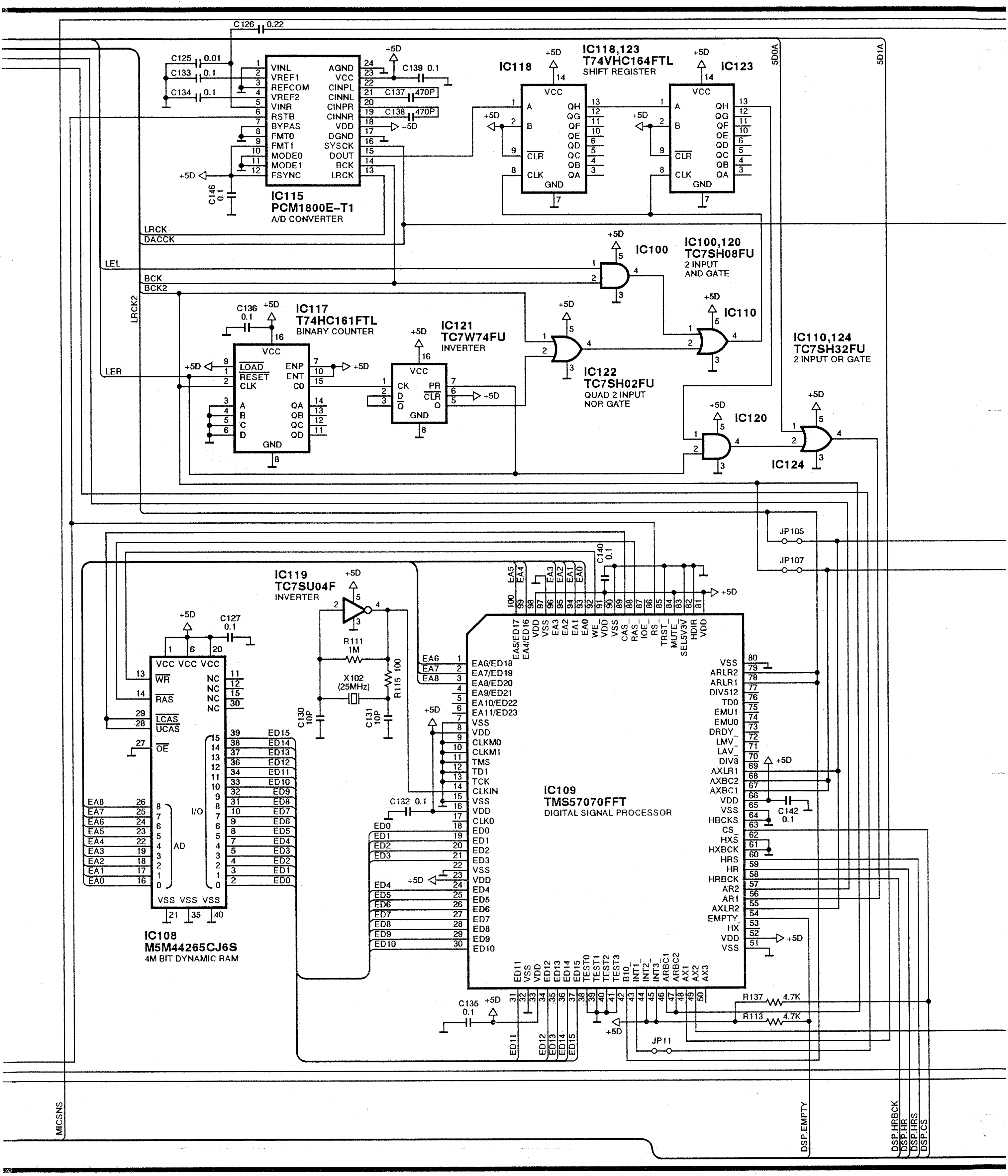

UART.C/D
PMUT
UART.INT0
UART.RST
MICSNS
COM.MAC
COM.98
COM.DOSV
COM.MIDI
UART.CS
SGCS
KSCS
IC6
TMP94C241AF
MAIN CPU
IC12
TC74HC138AF
3 TO 8 DECODER
IC20
TC7S04F
INVERTER
Q6
2SD601AQ
RESET
C11 0.1
C15 0.1
C16 0.1
+5D
R44 0
R46 0
R47 0
R49 0
Z3 4.7K × 4
R39 10K
R40 10K
R41 10K
R38 100
C18 16V10
R51 100K
R52 4.7K
C22 0.1
C28 0.1
C68 330P
C56 150P
C12 0.1
R36 4.7K
R26 4.7K
R31 0
C13 0.1
R6 4.7K
C14 0.1
C25 0.1
R13 4.7K
R155 0
R43 1M
X1 (10MHz)
R45 100
R48 0
C17 10P
C19 10P
C21 0.047
R32 100K
L1 10 μ
R90 100
C9 0.22
D4 MA110
R37 6.8K
Z1 100 × 4
Z2 100 × 4
Z4 100 × 4
Z5 100 × 4
Z7 100 × 4
C23 0.1
C66 0.1
R156 0
R27 0
R157 0
Z13 4.7K × 4
Z14 4.7K × 4
Z15 4.7K × 4
Z16 4.7K × 4
Z17 4.7K × 4
Z18 4.7K × 4
Z19 4.7K × 4
Z20 4.7K × 4
ADVSS
ADVCC
DAVSS
DAVCC
DAREFH
DAREFL
DAOUT0
DAOUT1
DVCC
PC0
PC1
PD0
INT4
INT5
PD4
PD5
PD6
DVSS
PE0/T08
PE1/T18/INT9
PE2/T18/INT9
PE4/T0A
INTA (EDGE)
PE6/TIB/INTB
TXD0
PF1/RXD0
SCLK0
TXD1
RXD1
SCLK1
DVCC
NMI
WAIT
AM0
CLK
TEST0
TEST1
CLVSS
RESERVE
CLVCC
VREFL
VREFH
AN7
AN6
AN5
AN4
AN3
AN2
AN1
AN0
DVSS
PH3/TC3
PH2/TC2
PH1/TC1
TC0
INT0
PZ7
PZ6
PZ5
PZ4
PZ3
PZ2
PZ1
PZ0
DVCC
A0
A1
A2
A3
A4
A5
A6
A7
DVSS
A8
A9
A10
A11
A12
A13
A14
A15
DVCC
A16
A17
A18
A19
A20
A21
A22
A23
DVSS
D31
D30
D29
D28
D27
D26
D25
D24
DVCC
D23
D22
D21
D20
D19
D18
D17
D16
DVSS
D15
D14
D13
D12
D11
D10
D9
D8
DVCC
D7
DVSS
X1
X2
AM1
RESET
WDTOUT
DVCC
LLCAS1
LUCAS1
HLCAS1
HUCAS1
WE1
PA0
PA1
PA2
OE1
PA4
DVSS
CS5
CS4
RAS1
CS2
CS1
CS0
DVCC
P76
P75
WRHH
WRHL
WRLH
WRLL
RD
DVSS
D0
D1
D2
D3
D4
D5
D6
VCC
GND
A0
A1
A2
CS2
CS3
CS1
Y
SGCS
KSCS
UARTCS
FDC,DMAACK
FDCCS
LLCAS
LUCAS
HLCAS
HUCAS
WE
OE
CS5
RAS
CS2
CS1
❶

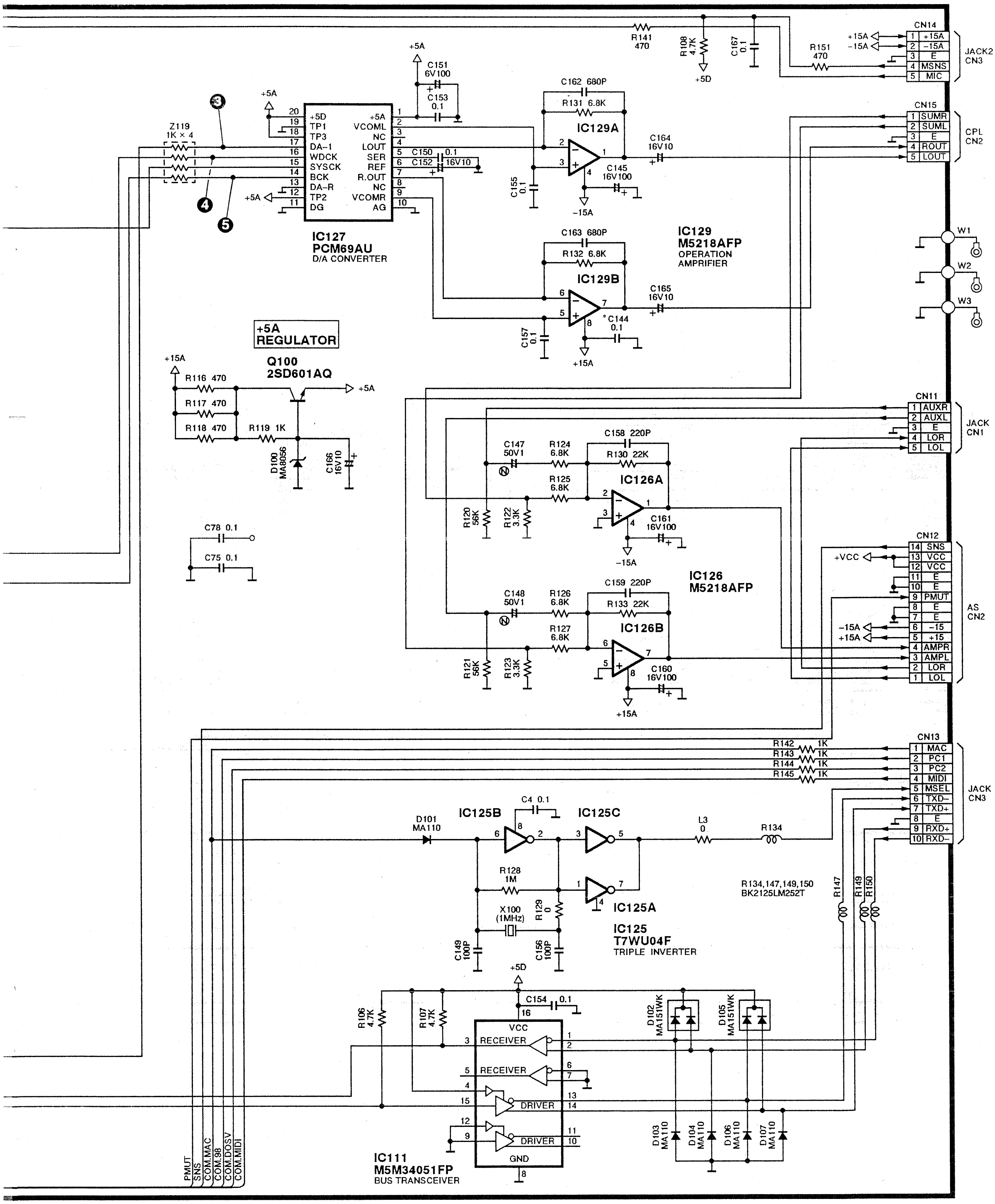

IORST
WRLL
RD
R62 3.3K
X3 (24MHz)
+5D
C38 0.1
R68 1K
Z21 1K × 4
C31 100P
C60 100P
IC15
D72070GF3BE
FLOPPY DISK CONTROLER
DWAAK
RESET
DGND
XA1
XA2
XB
DVDD
TD1
TWS
TCK
TD0
DEN1
DEN0
HOLD (SEL)
DS3
INDEX
DS0
DS1
DS2
BGND
ME0
ME1
DIR(CA0)
STEP(CA0)
SIDE(CA0)
NC(LSTRB)
ME2 (ENBL0)
ME3 (ENBL1)
WDATA
WGATE
TRK0
RD
WR
CS
A0
A1
A2
DB0
DB1
DB2
DB3
DGND
DB4
DB5
DB6
DB7
DVDD
INT
DMARQ
TC
ENDKCG
DRV2
PCTYP0
PCTYP1
CGP1
CGP2
AGND
LPF1
LPF2
AVDD
READY/DKCG
RDATA
WPRT
C32 0.1
R59 6.8K
R60 1K
C37 0.0018
C74 0.033
C40 0.033
C41 0.033
C42 0.1
C47 6V220
R64 47
C36 0.022
IC22
TC7S08F
C67 0.1
Q7,8
2SD601AQ
Q7
Q8
R74 1.5K
R73 1.5K
R78 470K
C53 50V1
+24V
C65 0.1
IC21
TC74HC74AF
DUAL D FLIP-FLOP
VCC
R1
D1
CLK1
PR1
Q1
Q2
PR2
CLK2
D2
R2
GND
IC9
TC74VHC08F
QUAD 2 INPUT AND GATE
HUCAS
HLCAS
IC9A
IC9B
C62 0.047
+5BB
IC10
TC7S08F
2 INPUT AND GATE
RAS
C26 0.1
WE
OE
VCC VCC VCC
LCAS
UCAS
NC
A10
A9
A8
A7
A6
A5
A4
A3
A2
AD
I/O
D31
D30
D29
D28
D27
D26
D25
D24
D23
D22
D21
D20
D19
D18
D17
D16
VSS VSS VSS
IC11
M5M44265CJ6S
4M BIT DYNAMIC RAM
R56 0
C39 0.1
D7 MA110
R70 120K
C51 50V1
C49 0.1
C35 0.1
IC16
M66271FP
LCD CONTROLER
VSS
MIOCS
MHWR
MLWR
MRD
NMCS
MWAIT
VDD
MPUCLK
VSS2
MRESET
MPUSEL
MBHE
A0
A1
A2
A3
A4
A5
A6
A7
VDD2
VSS4
VSS12
OSC2
OSC1
VDD7
NC10
NC9
NC8
NC7
UD3
UD2
UD1
UD0
FLM
LP
CP
VSS11
VDD6
M
LCDENB
D15
D14
D13
D12
D11
D10
D9
D8
VDD5
VSS5
D7
D6
D5
D4
D3
D2
D1
D0
VDD4
VSS8
VSS5
A8
A9
A10
A11
A12
A13
NC
NC2
VDD3
VSS6
NC3
NC4
NC5
NC6
VSS7
C45 0.1
R4 4.7K
R3 4.7K
VDD OUT
IC1
MN1382QTX
RESET IC
C3 0.1
VCC BYTE
RY/BY
RESET
CE
OE
WE
A20
A19
A18
A17
A16
A15
A14
A13
A12
A11
DT
IC2
QVIGPR702AX1
8M BIT PROGRAM ROM(ODD)


IC9D
IC9C
IC9
TC74VHC08F
QUAD 2 INPUT
AND GATE
IORST
LUCAS
LLCAS
C27 0.1
+5BB
IC13
M5M44265CJ6S
4M BIT DYNAMIC RAM
C29 0.1
WE
OE
WR
RAS
LCAS
UCAS
I/O
AD
IC14
QSIGX3C24004
24M BIT
RHYTHM DATA ROM
C30 0.1
JP14
+5D
WP
BYTE
CE1
NC
DT
Z22
47 × 4
Z23
47 × 4
Z24
47 × 4
CN5
IP
E
MOT
DIR
STEP
WDT
WGA
TRK0
WPRT
RDT
SIDE
DCH
+5D
FDD
CN7
SNS
CN6
VLCD
VEE
D3
D2
D1
D0
DOFF
VSS
VDD
CP
LOAD
FRM
INVL
CN4
Z26
1K × 4
Z25
470 × 4
L5
L6
L7
L8
L5–8
BK2125LM252T
C6 0.1
C10 0.1
C20 0.1
JP2
JP4
RY/BY
RESET
CE
OE
WE
VCC
VSS
IC4
QVIGPR702AX1
8M BIT PROGRAM
ROM(EVEN)
IC5
QSIGX3C08005
8M BIT TABLE
DATA ROM(ODD)
IC7
QSIGX3C08004
8M BIT TABLE
DATA ROM(EVEN)

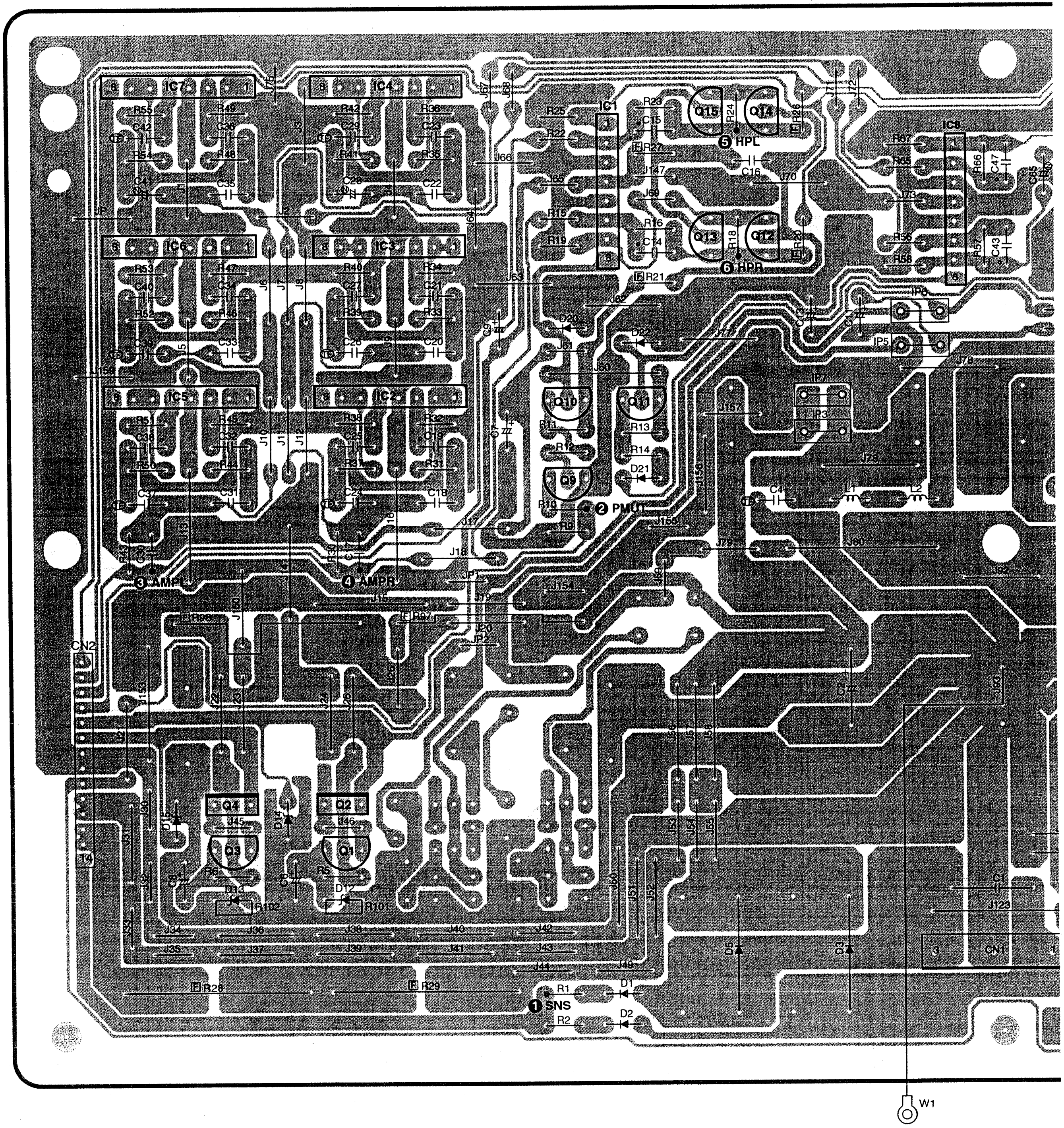
CN10
MKB1
CN2
+5D 1
E 2
KF0 3
KS0 4
KF1 5
KS1 6
KF2 7
KS2 8
KF3 9
KS3 10
KDB3 11
KDB2 12
KDB1 13
KDB0 14
KDB4 15
E 16
+5D
Z100
470 × 4
Z101
470 × 4
Z103
4.7K × 4
Z104
4.7K × 4
KF0
KS0
KF1
KS1
KF2
KS2
KF3
KS3
Z102
470 × 4
R100
470
C100 100P
C101 100P
C102 100P
C103 100P
C104 100P
JP102
AY20
+5D
C122
0.1
C124
0.1
VCC
BYTE
WP
CE1
OE
WE
+5D
AD
DT
VSS VSS
AY19 43
AY18 2
AY17 3
AY16 34
AY15 35
AY14 36
AY13 37
AY12 38
AY11 39
AY10 40
AY9 41
AY8 42
AY7 4
AY6 5
AY5 6
AY4 7
AY3 8
AY2 9
AY1 10
AY0 11
31 RD15
29 RD14
27 RD13
25 RD12
22 RD11
20 RD10
18 RD9
16 RD8
30 RD7
28 RD6
26 RD5
24 RD4
21 RD3
19 RD2
17 RD1
15 RD0
IC104
QSIGU3C32375
32M BIT WAVEFORM ROM
IC106
QSIGU3C32539
32M BIT WAVEFORM ROM
JP103
AX20
C121
0.1
C123
0.1
AX19 43
AX18 2
AX17 3
AX16 34
AX15 35
AX14 36
AX13 37
AX12 38
AX11 39
AX10 40
AX9 41
AX8 42
AX7 4
AX6 5
AX5 6
AX4 7
AX3 8
AX2 9
AX1 10
AX0 11
IC105
QSIGU3C32536
32M BIT WAVEFORM ROM
IC107
QSIGU3C32538
32M BIT WAVEFORM ROM
IC101
M5223FPE1
OPERATION AMPLIFIER
IC101A
Q101
2SD592ARS
+5D
+3.3D
IC101B
R112 1K
R101 1K
R102 1K
C111 0.1
C112 0.1
C113 6V47
+15A
MRXD
MTXD


IC102
TC7W74F
INVERTER
C108 0.1
+5D
VCC
CK
D
Q̄
PR
CLR
Q
GND
R138 220
R139 100
Z120 220 × 4
DACCK
LRCK
BCK
BCK2
LRCK2
MTMG
SDO0
C114 0.1
Z105 220 × 4
Z106 220 × 4
Z107 220 × 4
Z108 220 × 4
RD11
RD4
RD3
RD12
RD10
RD5
RD2
RD13
RD9
RD6
RD1
RD14
RD8
RD7
RD0
RD15
AY16
AY0
AY15
AY1
Z109 220 × 4
C117 0.1
+3.3D
Z110 220 × 4
Z111 220 × 4
AY14
AY2
AY13
AY3
AY12
AY4
AY11
AY5
Z112 220 × 4
Z113 220 × 4
AY10
AY6
AY9
AY7
AY8
AY17
AY18
AY19
C118 0.1
R110 1K
AY20
OEX1
OEX0
Z114 220 × 4
Z115 220 × 4
Z116 220 × 4
Z117 220 × 4
Z118 220 × 4
AX16
AX0
AX15
AX1
AX14
AX2
AX13
AX3
AX12
AX4
AX11
AX5
AX10
AX6
AX9
AX7
AX8
AX17
AX18
AX19
R109 1K
AX20
C119 0.1
C120 0.1
A3
A2
A1
IC103
TC203C220004
TONE GENERATOR LSI
LEL
LER
SDIA
SDOA
SDIB
SDOB
VDD5
KS0
KS1
VDD
KS2
KS3
KF0
KF1
VSS
KF2
KF3
KB0
KB1
KB2
KB3
KB4
RQWFI/SK0
DWFI0TXC0
DWFI1/RXC0
TXD0
RXD0
DWFI4/CTS0
DWFI5/SK1
DWFI6/TXC1
DWFI7/RXC1
DWFI8/TXD1
DWFI9/RXD1
DWFI10/CTS1
DWFI11/DOE0
DWFI12/DOE1
ECKOUT
MCKOUT
XO
XI
TXEMP1
BD1
DTR1
RTS1
TXEMPO
BD0
C110 0.1
R104 4.7K
COMTXD
COMRXD
R105 4.7K
R135 4.7K
C109 0.1
R103 1M
R114 100
X101 (33.8688MHz)
C105 6P
C107 6P
❷ TG CLOCK
LRCK
BCK
VSS
UACLK(SDO7)
BCK2(SDO6)
LRCK2(SDO5)
SDO4
VDD5
SDO3
SDO2
SDO1
SDO0
DT11
DT4
DT3
DT12
DT10
DT5
DT2
DT13
DT9
DT6
DT1
DT14
DT8
DT7
DT0
DT15
NOEY3
NOEY2
NOEY1
NOEY0
ADY16
ADY0
ADY15
ADY1
ADY14
ADY2
ADY13
ADY3
ADY12
ADY4
ADY11
ADY5
ADY10
ADY6
ADY9
ADY7
ADY8
ADY17
ADY18
ADY19
ADY20
NOEX3
NOEX2
NOEX1
NOEX0
ADX16
ADX0
ADX15
ADX1
ADX14
ADX2
ADX13
ADX3
ADX12
ADX4
ADX11
ADX5
ADX10
ADX6
ADX9
ADX7
ADX8
ADX17
ADX18
ADX19
ADX20
EXRW
EXADL8
EXADL7
EXADL6
EXADL5
EXADL4
EXADL3
EXADL2
EXADL1
DTR0
RTS0
DSR1
DSR0
TEST10
RXRDYI1
RXRDY1O
TXRDY1I
TXRDY1O
RXRDY0I
RXRDY0O
TXRDY0I
TXRDY0O
MD15
MD14
MD13
MD12
UAON(NC)
MD11
MD10
MD9
MD8
MD7
MD6
MD5
MD4
MD3
MD2
MD1
MD0
NRD
NWR
NAD
NUACE(NC)
NSGCE
NRST(NSGRST)
INT1(CHEMPT)
NKSCE
TE32CH(KNEG)
CD(NKSRST)
INT0(RXRDY)
MSET1
MSET0
EXADL0
C115 0.1
C116 0.1
D15
D14
D13
D12
D11
D10
D9
D8
D7
D6
D5
D4
D3
D2
D1
D0
R154 470
R153 470
UART.RST
RD
WRLL
UART.CS
SGCS
IORST
UART.INT1
KSCS
UART.C/D
UART.INT0

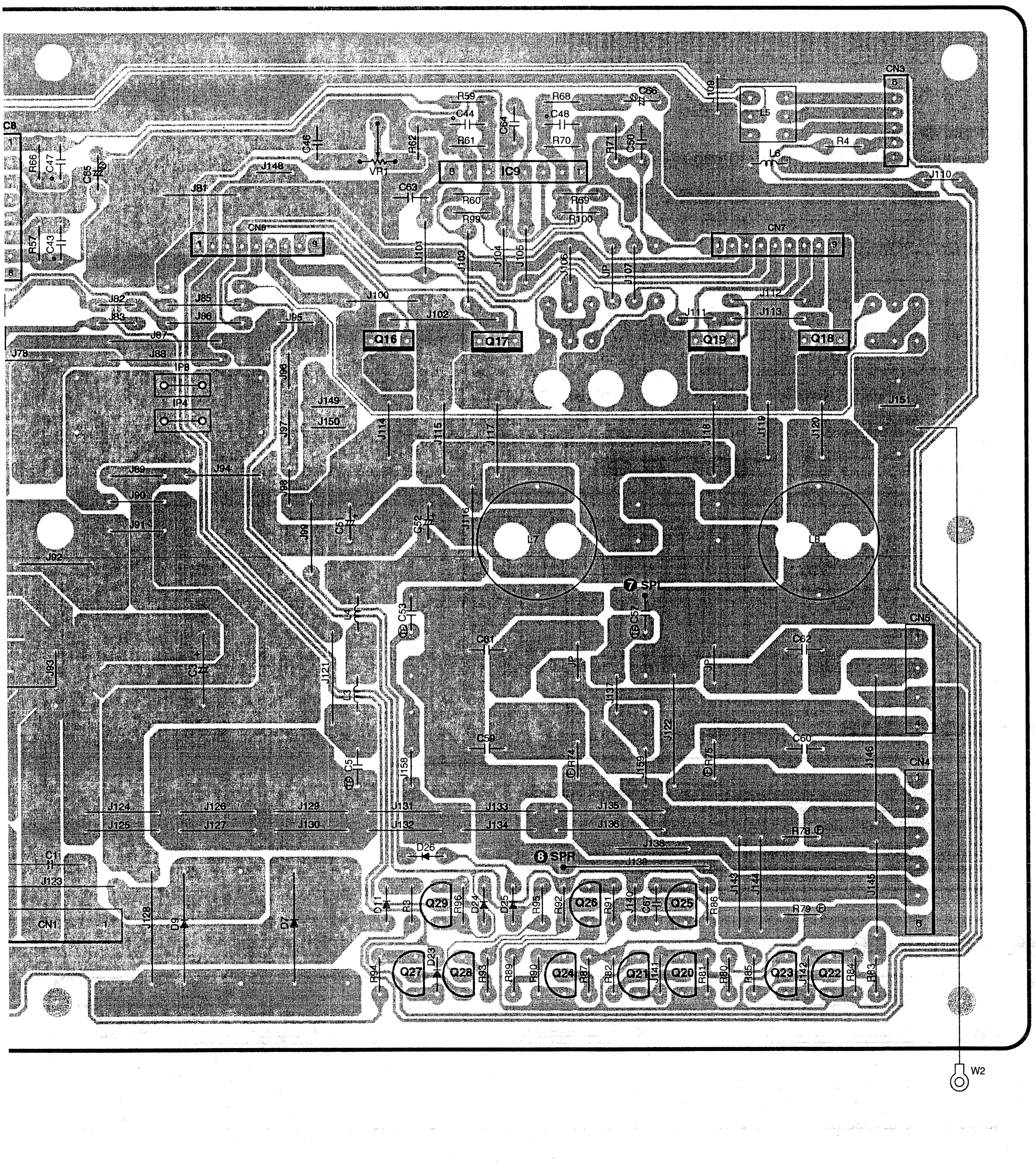

C126 0.22
C125 0.01
C133 0.1
C134 0.1
C146 0.1
C139 0.1
C137 470P
C138 470P
+5D
IC115
PCM1800E-T1
A/D CONVERTER
VINL
VREF1
REFCOM
VREF2
VINR
RSTB
BYPAS
FMT0
FMT1
MODE0
MODE1
FSYNC
AGND
VCC
CINPL
CINNL
CINPR
CINNR
VDD
DGND
SYSCK
DOUT
BCK
LRCK
IC118
IC118,123
T74VHC164FTL
SHIFT REGISTER
IC123
VCC
A
B
CLR
CLK
GND
QH
QG
QF
QE
QD
QC
QB
QA
5D0A
5D1A
LRCK
DACCK
LEL
BCK
BCK2
LRCK2
LER
IC100
IC100,120
TC7SH08FU
2 INPUT
AND GATE
IC110
IC110,124
TC7SH32FU
2 INPUT OR GATE
IC117
T74HC161FTL
BINARY COUNTER
C136 0.1
LOAD
RESET
CLK
ENP
ENT
CO
QA
QB
QC
QD
IC121
TC7W74FU
INVERTER
CK
D
Q
PR
CLR
IC122
TC7SH02FU
QUAD 2 INPUT
NOR GATE
IC120
IC124
JP105
JP107
C140 0.1
IC119
TC7SU04F
INVERTER
R111 1M
X102 (25MHz)
R115 100
C130 10P
C131 10P
C127 0.1
IC108
M5M44265CJ6S
4M BIT DYNAMIC RAM
VCC VCC VCC
WR
RAS
LCAS
UCAS
OE
NC
I/O
AD
VSS VSS VSS
EA0
EA1
EA2
EA3
EA4
EA5
EA6
EA7
EA8
ED0
ED1
ED2
ED3
ED4
ED5
ED6
ED7
ED8
ED9
ED10
ED11
ED12
ED13
ED14
ED15
IC109
TMS57070FFT
DIGITAL SIGNAL PROCESSOR
EA5/ED17
EA4/ED16
VDD
VSS
EA3
EA2
EA1
EA0
WE_
CAS_
RAS_
IOE_
RS_
TRST_
MUTE_
SEL5V3V
HDIR
EA6/ED18
EA7/ED19
EA8/ED20
EA9/ED21
EA10/ED22
EA11/ED23
CLKM0
CLKM1
TMS
TDI
TCK
CLKIN
CLKO
ARLR2
ARLR1
DIV512
TDO
EMU1
EMU0
DRDY_
LMV_
LAV_
DIV8
AXLR1
AXBC2
AXBC1
HBCKS
CS_
HXS
HXBCK
HRS
HR
HRBCK
AR2
AR1
AXLR2
EMPTY
HX
TEST0
TEST1
TEST3
B10_
INT1_
INT2_
INT3_
ARBC1
ARBC2
AX1
AX2
AX3
C132 0.1
C142 0.1
C135 0.1
R137 4.7K
R113 4.7K
JP11
MICSNS
DSP.EMPTY
DSP.HRBCK
DSP.HR
DSP.HRS
DSP.CS


IC127
PCM69AU
D/A CONVERTER
+5D
TP1
TP3
DA-1
WDCK
SYSCK
BCK
DA-R
TP2
DG
+5A
VCOML
NC
LOUT
SER
REF
R.OUT
NC
VCOMR
AG
Z119
1K × 4
③
④
⑤
C151
6V100
C153
0.1
C150 0.1
C152 16V10
C155
0.1
C162 680P
R131 6.8K
IC129A
C164
16V10
C145
16V100
-15A
C163 680P
R132 6.8K
IC129B
C165
16V10
C144
0.1
C157
0.1
+15A
IC129
M5218AFP
OPERATION
AMPRIFIER
R141
470
R108
4.7K
C167
0.1
+5D
R151
470
CN14
+15A
-15A
E
MSNS
MIC
JACK2
CN3
CN15
SUMR
SUML
E
ROUT
LOUT
CPL
CN2
W1
W2
W3
+5A
REGULATOR
Q100
2SD601AQ
R116 470
R117 470
R118 470
R119 1K
D100
MA8056
C166
16V10
C78 0.1
C75 0.1
CN11
AUXR
AUXL
E
LOR
LOL
JACK
CN1
C147
50V1
R124
6.8K
C158 220P
R130 22K
IC126A
R125
6.8K
R120
56K
R122
3.3K
C161
16V100
C148
50V1
R126
6.8K
C159 220P
R133 22K
IC126B
R127
6.8K
R121
56K
R123
3.3K
C160
16V100
IC126
M5218AFP
CN12
SNS
VCC
VCC
E
E
PMUT
E
E
-15
+15
AMPR
AMPL
LOR
LOL
+VCC
AS
CN2
CN13
MAC
PC1
PC2
MIDI
MSEL
TXD-
TXD+
E
RXD+
RXD-
JACK
CN3
R142 1K
R143 1K
R144 1K
R145 1K
D101
MA110
IC125B
C4 0.1
IC125C
L3
0
R134
R128
1M
IC125A
X100
(1MHz)
R129
0
C149
100P
C156
100P
IC125
T7WU04F
TRIPLE INVERTER
R134,147,149,150
BK2125LM252T
R147
R149
R150
R106
4.7K
R107
4.7K
C154 0.1
VCC
RECEIVER
RECEIVER
DRIVER
DRIVER
GND
D102
MA151WK
D105
MA151WK
D103
MA110
D104
MA110
D106
MA110
D107
MA110
IC111
M5M34051FP
BUS TRANSCEIVER
PMUT
SNS
COM.MAC
COM.98
COM.DOSV
COM.MIDI

B AS P.C.B.



IC7
IC4
IC1
IC8
IC6
IC3
IC5
IC2
Q15
Q14
Q13
Q12
Q10
Q11
Q9
Q4
Q2
Q3
Q1
❺ HPL
❻ HPR
❷ PMUT
❸ AMPL
❹ AMPR
❶ SNS
R55
R49
R42
R36
R25
R23
R24
R26
R67
R66
C47
C65
C42
C36
C29
C23
R22
C15
R27
R65
R54
R48
R41
R35
J66
C16
J70
C41
C35
C28
C22
J65
J147
J73
J69
R15
R16
R18
R20
R56
R57
C43
R19
C14
R58
R53
R47
R40
R34
J63
R21
C40
C34
C27
C21
J62
IP6
R52
R46
R39
R33
D20
C9
C39
C33
C26
C20
J61
D22
J77
IP5
J78
J159
J60
R45
R38
R32
IP7
IP3
J157
R11
R13
C38
C32
C25
C19
R12
R14
R50
R44
R37
R31
D21
J156
J75
C37
C31
C24
C18
C4
L1
L2
R10
R9
J17
J155
R43
C30
R30
J18
J79
J80
J13
J14
J16
JP1
J154
J52
J15
J19
R98
R97
J20
JP2
CN2
J153
J22
J23
J24
J26
J59
C7
J56
J57
J58
J2
J30
J31
J32
J33
J53
J54
J55
J45
J46
D15
D14
C8
R6
C6
R5
D13
D12
R102
R101
J50
J51
J52
C1
J123
J34
J36
J38
J40
J42
J35
J37
J39
J41
J43
D5
D3
CN1
T4
J44
J49
R28
R29
R1
D1
R2
D2
W1

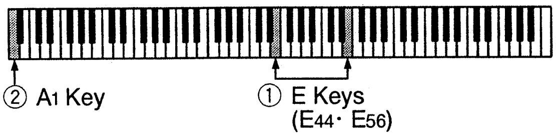

CN3
R59
R68
C66
C44
C48
L5
C46
C64
C47
R66
C65
R62
R61
R70
R71
C50
R4
L6
J148
VR1
IC9
J110
J81
C63
R60
R69
R99
R100
C43
R57
CN6
CN7
J101
J103
J104
J105
J106
JP
J107
J82
J85
J100
J112
J83
J86
J95
J102
J111
J113
J87
Q16
Q17
Q19
Q18
J79
J88
IP8
J96
J149
J151
IP4
J150
J114
J115
J117
J118
J119
J120
J97
J89
J94
J98
J90
C51
C52
J116
L7
L8
J91
J99
J92
7 SP
C53
C58
C61
C62
CN5
L4
J93
C3
J121
J137
J122
L3
C59
C60
C5
J158
R74
J159
R75
J146
CN4
J124
J126
J129
J131
J133
J135
J125
J127
J130
J132
J134
J136
R78
J138
D26
C1
8 SPR
J139
J123
J143
J144
J145
D11
R3
Q29
R96
D24
D25
R95
R92
Q26
R91
J140
C67
Q25
R86
R79
CN1
J128
D9
D7
R94
D23
Q27
Q28
R93
R89
R90
Q24
R87
R82
Q21
J141
Q20
R81
R80
R85
Q23
J142
Q22
R84
R83
W2

■ Measuring Condition of AS P.C.B.

Check Point ❸~❽

Set to the self-diagnostic mode followings.

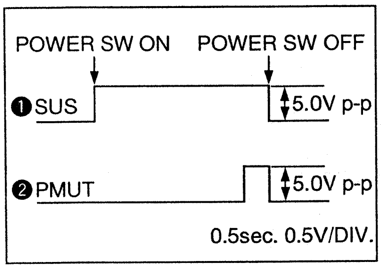
- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND .... SYNTH
- Main Volume .... MAX
- Keyboard .... A1 (②)


② A1 Key
① E Keys
(E44· E56)

Check Point ❶, ❷

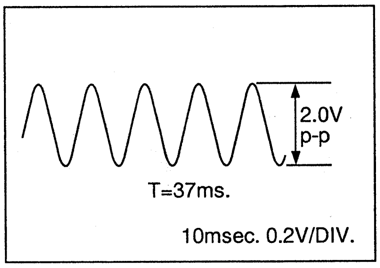
Set the initial setting mode (Refer to page I-5)

❶ SNS, ❷ PMUT

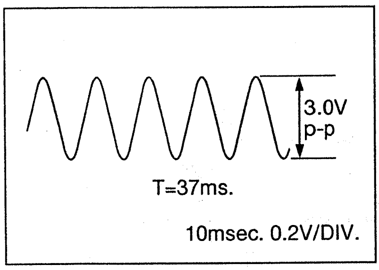


- Power SW .... ON → OFF

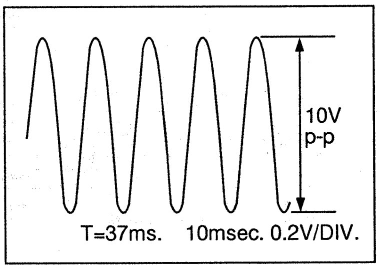
❸ AMPL, ❹ AMPR



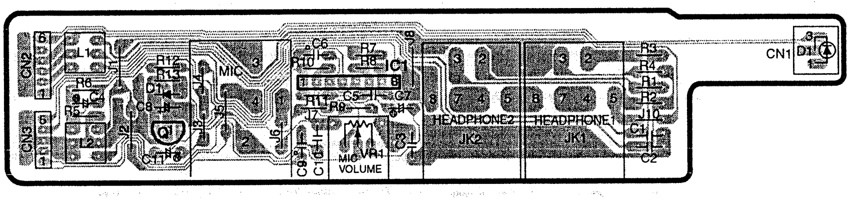
❺ HPL, ❻ HPR



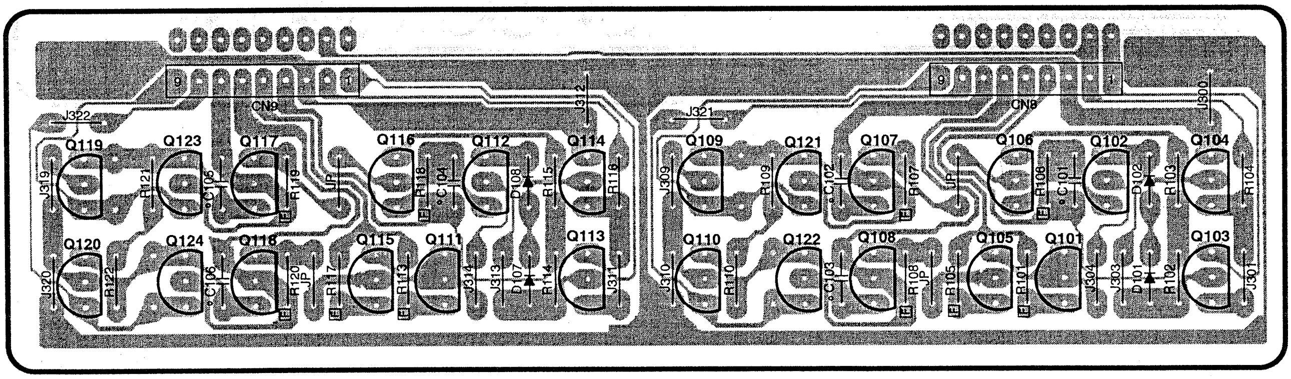
❼ SPL, ❽ SPR



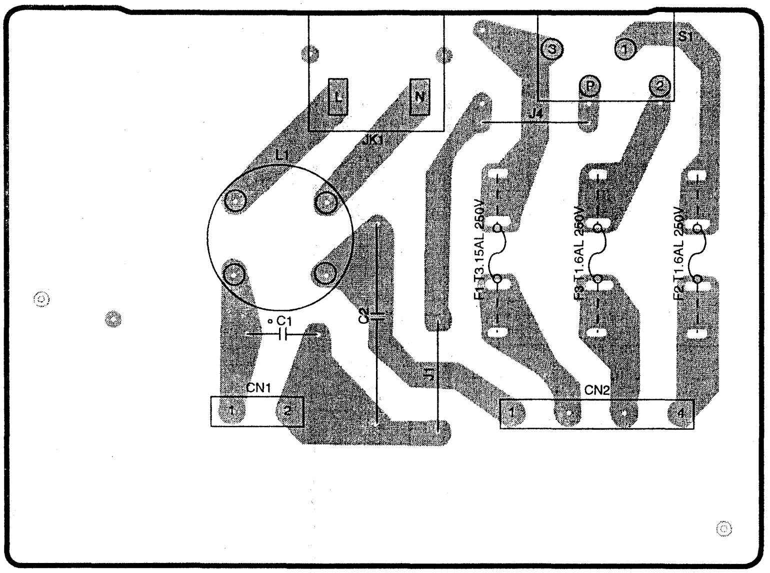
C JACK2 P.C.B.


CN2
CN3
L1
L2
R6
R5
C4
C8
J1
R12
R13
D1
Q1
C11
J2
J3
J4
J5
MIC
C6
R10
R7
R8
IC1
J8
R11
C5
C7
R9
J7
J6
C9
C10
VR1
MIC
VOLUME
C3
HEADPHONE2
HEADPHONE1
JK2
JK1
R3
R4
R1
R2
J10
C1
C2
CN1
D1

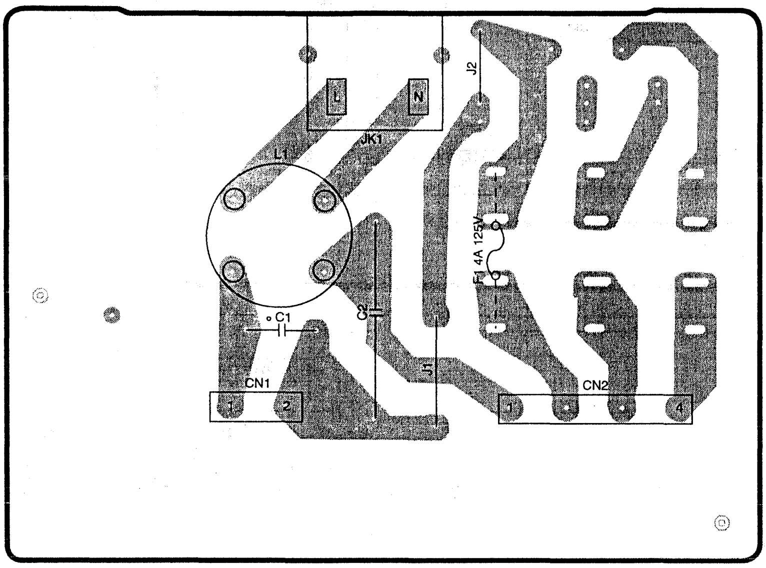
D ASUB P.C.B.


CN9
CN8
J322
J321
J312
J300
Q119
Q123
Q117
Q116
Q112
Q114
Q109
Q121
Q107
Q106
Q102
Q104
J319
R121
C105
R119
JP
R118
C104
D108
R115
R116
J309
R109
C102
R107
JP
R106
C101
D102
R103
R104
Q120
Q124
Q118
Q115
Q111
Q113
Q110
Q122
Q108
Q105
Q101
Q103
J320
R122
C106
R120
JP
R117
R113
J314
J313
D107
R114
J311
J310
R110
C103
R108
JP
R105
R101
J304
J303
D101
R102
J301

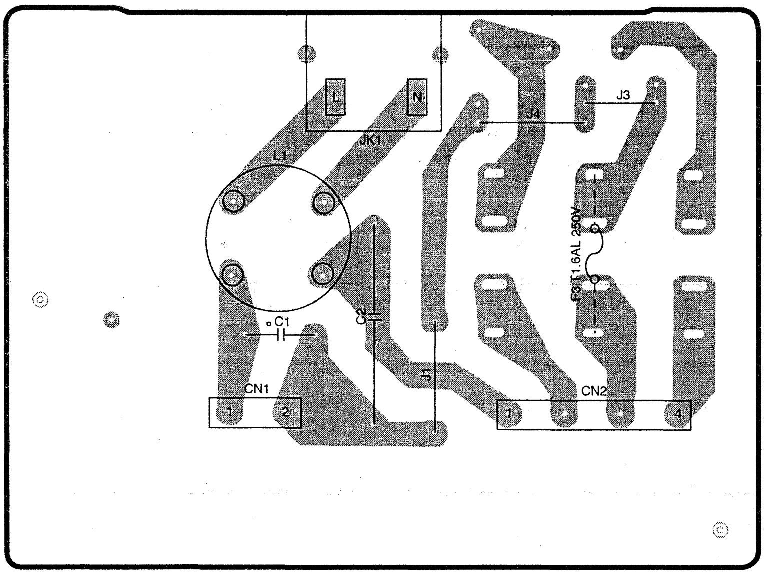
E ACP P.C.B. (X XS XD XT)


S1
3
1
P
2
J4
L
N
JK1
L1
F1 T3.15AL 250V
F3 T1.6AL 250V
F2 T1.6AL 250V
C1
C2
J1
CN1
1
2
CN2
1
4

E ACP P.C.B. (M MC XM)

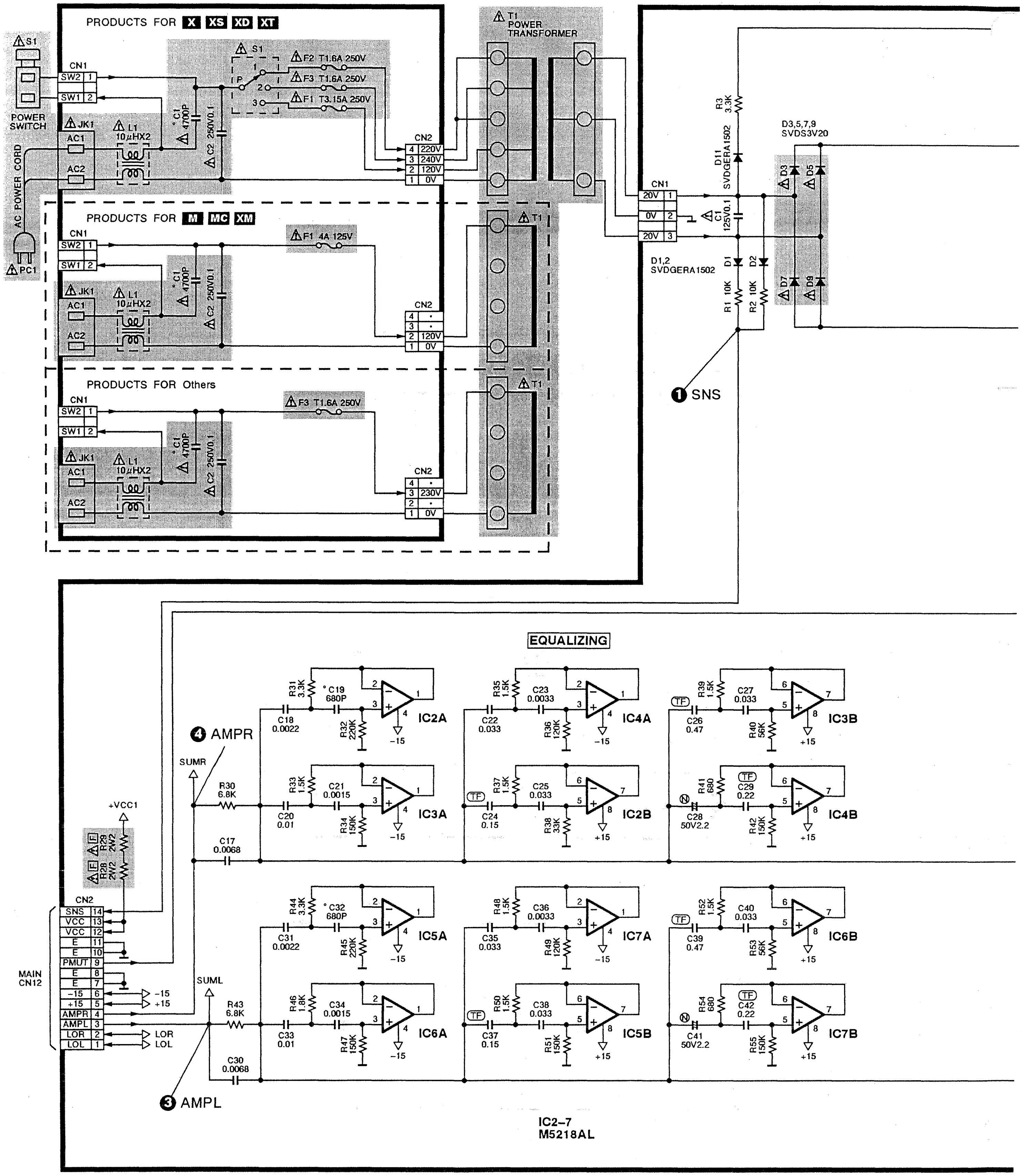

J2
L
N
JK1
L1
F1 4A 125V
C1
C2
J1
CN1
1
2
CN2
1
4

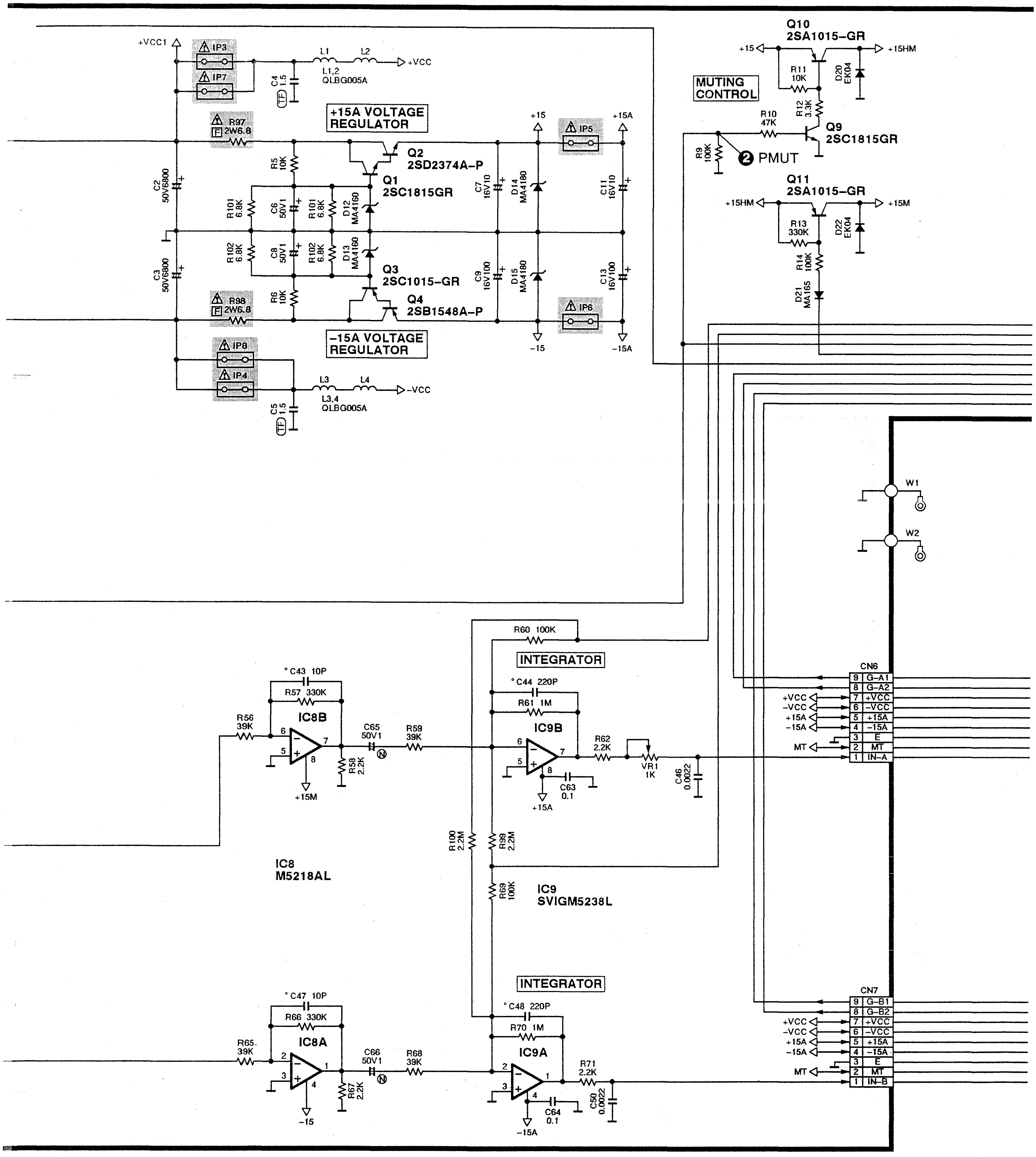
E ACP P.C.B. (Others)

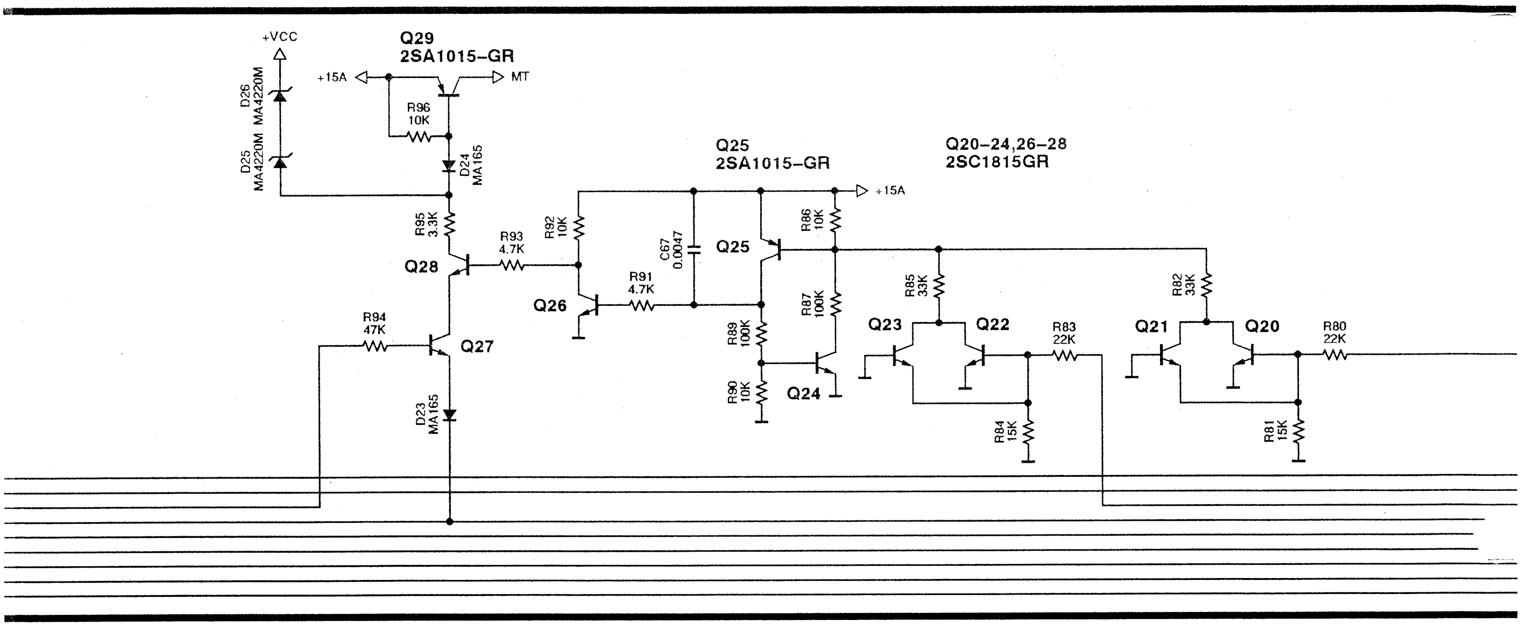

L
N
J4
J3
JK1
L1
F3 T1.6AL 250V
C1
C2
J1
CN1
1
2
CN2
1
4

E ACP CIRCUIT

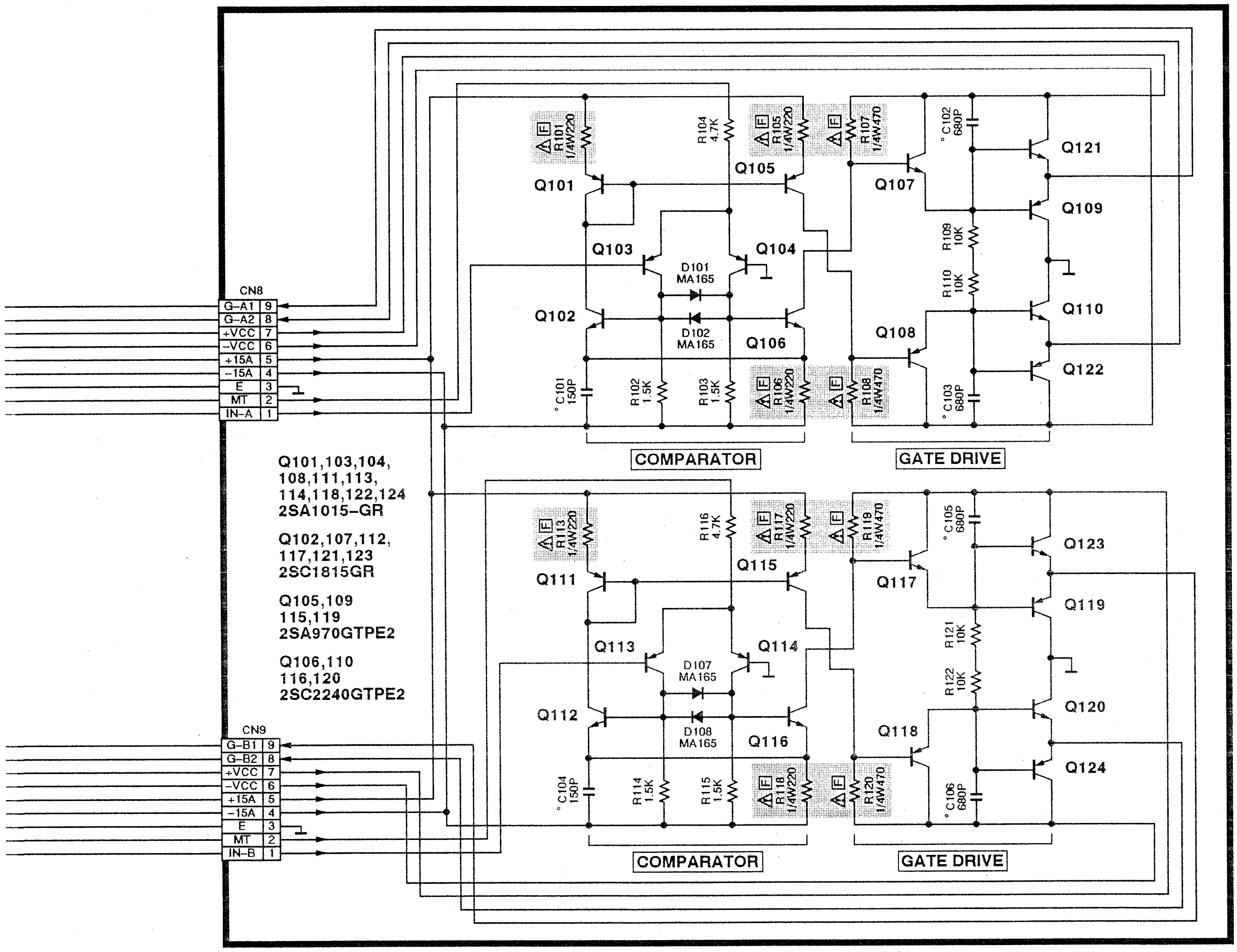
B AS CIRCUIT

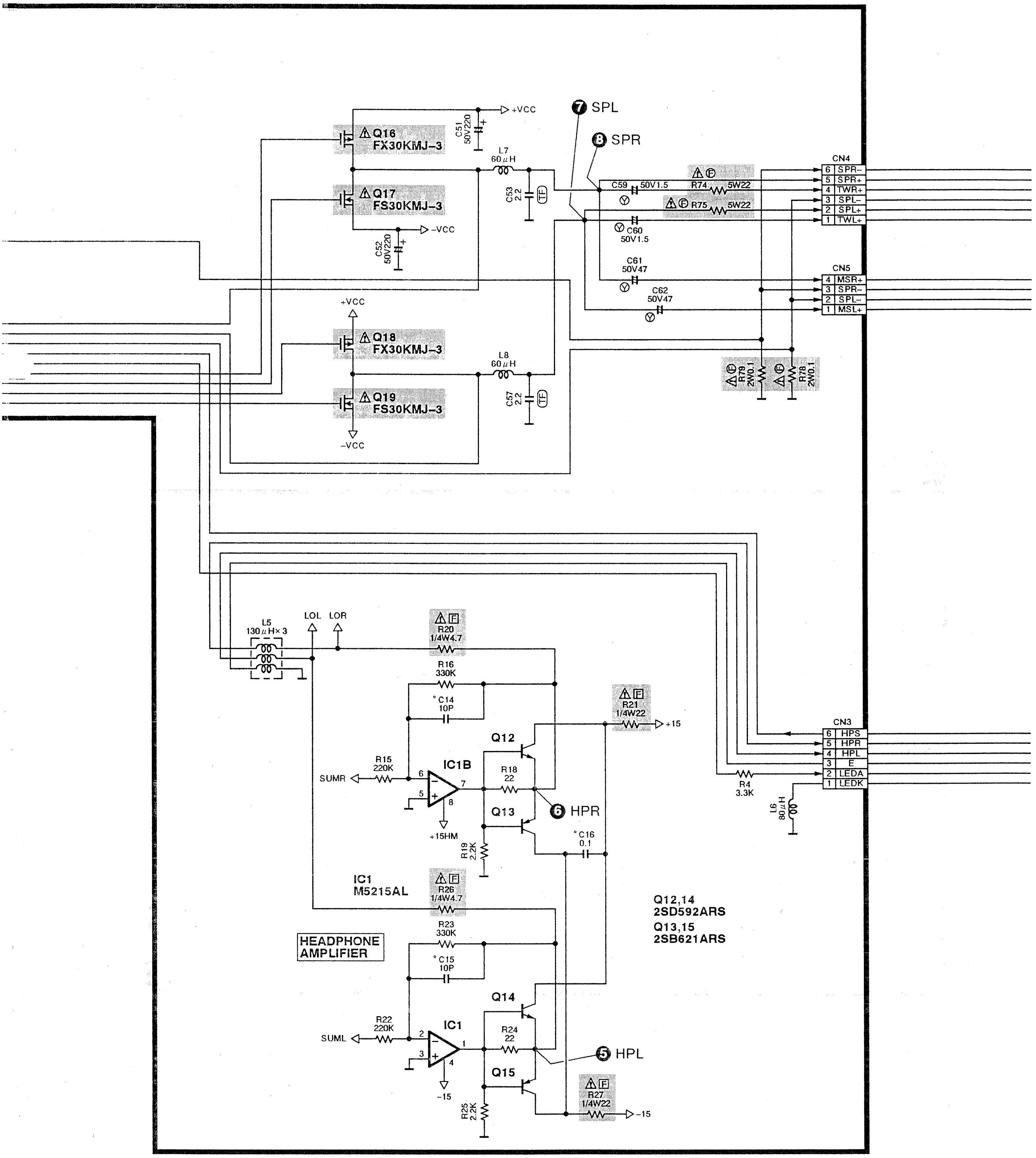

PRODUCTS FOR X XS XD XT
S1
POWER SWITCH
CN1
SW2 1
SW1 2
JK1
AC1
AC2
AC POWER CORD
PC1
L1 10μHX2
C1 4700P
C2 250V0.1
S1
P
F2 T1.6A 250V
F3 T1.6A 250V
F1 T3.15A 250V
CN2
4 220V
3 240V
2 120V
1 0V
T1 POWER TRANSFORMER
PRODUCTS FOR M MC XM
F1 4A 125V
4 •
3 •
2 120V
1 0V
PRODUCTS FOR Others
F3 T1.6A 250V
4 •
3 230V
2 •
1 0V
CN1
20V 1
0V 2
20V 3
R3 3.3K
D11 SVDGERA1502
C1 125V0.1
D1,2 SVDGERA1502
D1
D2
R1 10K
R2 10K
D3,5,7,9 SVDS3V20
D3
D5
D7
D9
① SNS
EQUALIZING
R31 3.3K
C19 680P
C18 0.0022
R32 220K
IC2A
-15
R35 1.5K
C23 0.0033
C22 0.033
R36 120K
IC4A
TF
R39 1.5K
C27 0.033
C26 0.47
R40 56K
IC3B
+15
④ AMPR
SUMR
R30 6.8K
R33 1.5K
C21 0.0015
C20 0.01
R34 150K
IC3A
R37 1.5K
C25 0.033
C24 0.15
R38 33K
IC2B
R41 680
C29 0.22
C28 50V2.2
R42 150K
IC4B
C17 0.0068
+VCC1
R29 2W2
R28 2W2
CN2
SNS 14
VCC 13
VCC 12
E 11
E 10
PMUT 9
E 8
E 7
-15 6
+15 5
AMPR 4
AMPL 3
LOR 2
LOL 1
MAIN CN12
-15
+15
LOR
LOL
R44 3.3K
C32 680P
C31 0.0022
R45 220K
IC5A
R48 1.5K
C36 0.0033
C35 0.033
R49 120K
IC7A
R52 1.5K
C40 0.033
C39 0.47
R53 56K
IC6B
SUML
R43 6.8K
R46 1.8K
C34 0.0015
C33 0.01
R47 150K
IC6A
R50 1.5K
C38 0.033
C37 0.15
R51 150K
IC5B
R54 680
C42 0.22
C41 50V2.2
R55 150K
IC7B
C30 0.0068
③ AMPL
IC2–7 M5218AL

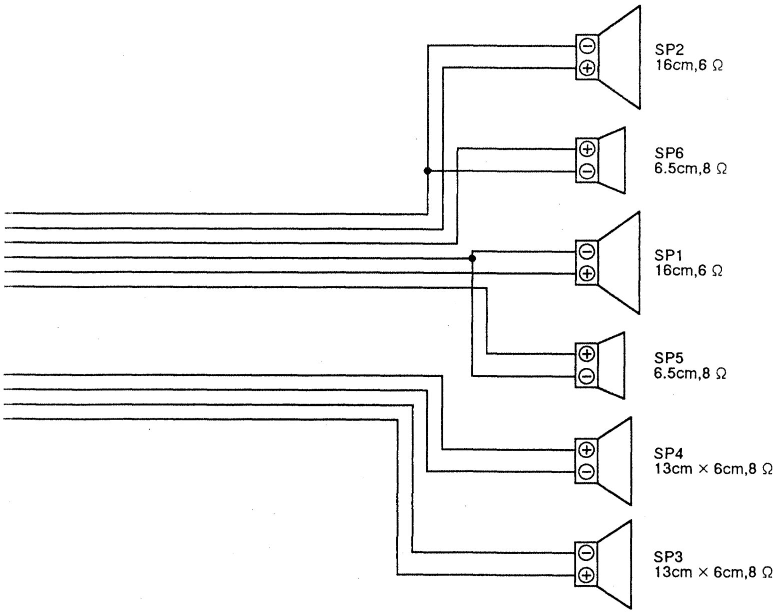

+VCC1
IP3
IP7
L1
L2
L1,2
QLBG005A
+VCC
C4
TF 1.5
+15A VOLTAGE REGULATOR
R97
F 2W6.8
R5 10K
Q2
2SD2374A-P
Q1
2SC1815GR
C2 50V6800
R101 6.8K
C6 50V1
R101 6.8K
D12 MA4160
C7 16V10
D14 MA4180
+15
IP5
+15A
C11 16V10
R102 6.8K
C8 50V1
R102 6.8K
D13 MA4160
C3 50V6800
Q3
2SC1015-GR
C9 16V100
D15 MA4180
C13 16V100
R6 10K
Q4
2SB1548A-P
R98
F 2W6.8
IP6
-15
-15A
-15A VOLTAGE REGULATOR
IP8
IP4
L3
L4
L3,4
QLBG005A
-VCC
C5
TF 1.5
Q10
2SA1015-GR
+15
+15HM
R11 10K
D20 EK04
MUTING CONTROL
R12 3.3K
R10 47K
Q9
2SC1815GR
R9 100K
❷ PMUT
Q11
2SA1015-GR
+15HM
+15M
R13 330K
D22 EK04
R14 100K
D21 MA165
W1
W2
R60 100K
INTEGRATOR
°C43 10P
R57 330K
IC8B
R56 39K
C65 50V1
R59 39K
R58 2.2K
+15M
°C44 220P
R61 1M
IC9B
R62 2.2K
VR1 1K
C46 0.0022
C63 0.1
+15A
CN6
9 G-A1
8 G-A2
7 +VCC
6 -VCC
5 +15A
4 -15A
3 E
2 MT
1 IN-A
+VCC
-VCC
+15A
-15A
MT
R100 2.2M
R99 2.2M
R69 100K
IC8
M5218AL
IC9
SVIGM5238L
INTEGRATOR
°C47 10P
R66 330K
IC8A
R65 39K
C66 50V1
R68 39K
R67 2.2K
-15
°C48 220P
R70 1M
IC9A
R71 2.2K
C50 0.0022
C64 0.1
-15A
CN7
9 G-B1
8 G-B2
7 +VCC
6 -VCC
5 +15A
4 -15A
3 E
2 MT
1 IN-B
+VCC
-VCC
+15A
-15A
MT


+VCC
Q29
2SA1015-GR
+15A
MT
D26 MA4220M
D25 MA4220M
R96 10K
D24 MA165
Q25
2SA1015-GR
Q20-24,26-28
2SC1815GR
+15A
R95 3.3K
R93 4.7K
R92 10K
C67 0.0047
Q25
R86 10K
Q28
R91 4.7K
Q26
R85 33K
R82 33K
R89 100K
R87 100K
R94 47K
Q27
Q23
Q22
R83 22K
Q21
Q20
R80 22K
R90 10K
Q24
D23 MA165
R84 15K
R81 15K

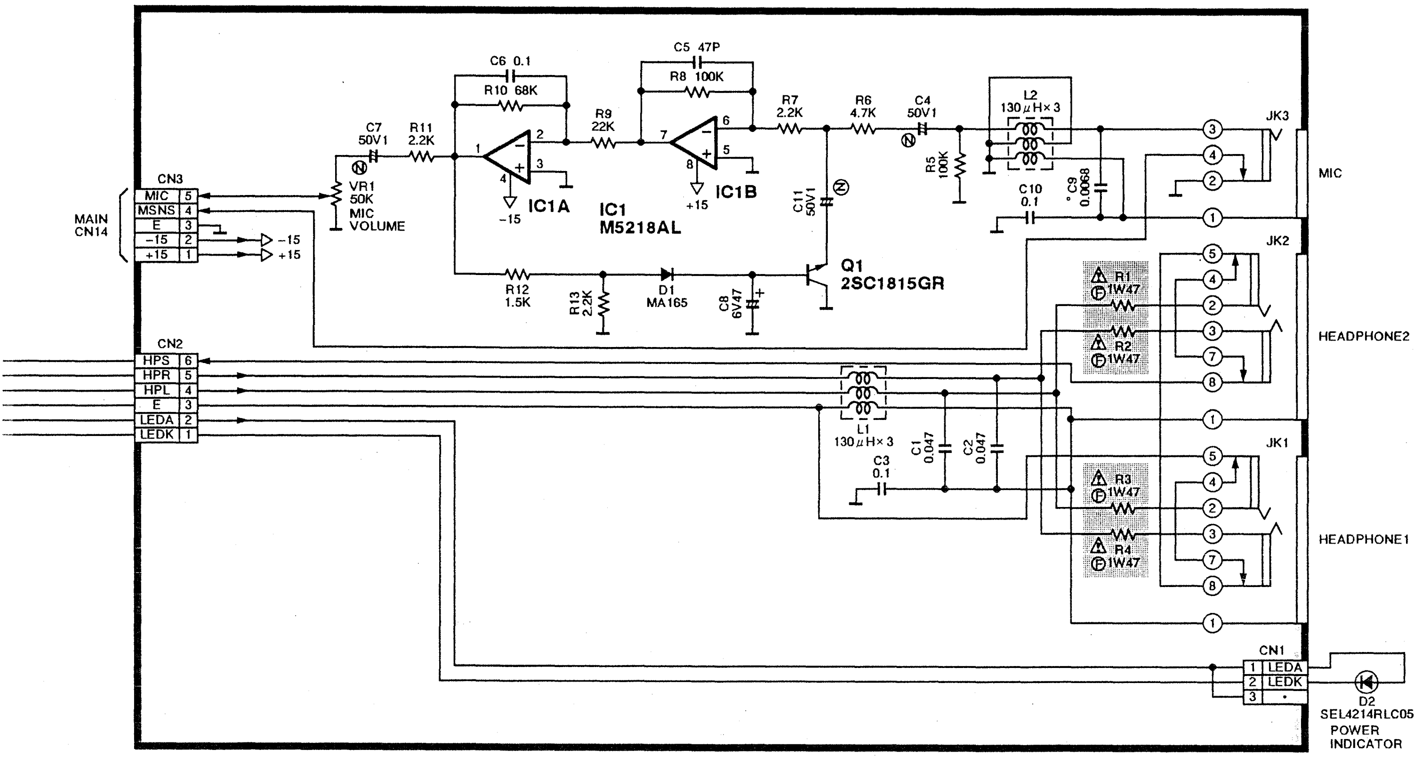
D ASUB CIRCUIT


CN8
G-A1 9
G-A2 8
+VCC 7
-VCC 6
+15A 5
-15A 4
E 3
MT 2
IN-A 1
R101 1/4W220
R104 4.7K
R105 1/4W220
R107 1/4W470
C102 680P
Q121
Q101
Q105
Q107
Q109
Q103
D101 MA165
Q104
R109 10K
R110 10K
Q102
D102 MA165
Q106
Q108
Q110
Q122
C101 150P
R102 1.5K
R103 1.5K
R106 1/4W220
R108 1/4W470
C103 680P
COMPARATOR
GATE DRIVE
Q101,103,104,
108,111,113,
114,118,122,124
2SA1015-GR
Q102,107,112,
117,121,123
2SC1815GR
Q105,109
115,119
2SA970GTPE2
Q106,110
116,120
2SC2240GTPE2
R113 1/4W220
R116 4.7K
R117 1/4W220
R119 1/4W470
C105 680P
Q123
Q111
Q115
Q117
Q119
Q113
D107 MA165
Q114
R121 10K
R122 10K
Q112
D108 MA165
Q116
Q118
Q120
Q124
CN9
G-B1 9
G-B2 8
+VCC 7
-VCC 6
+15A 5
-15A 4
E 3
MT 2
IN-B 1
C104 150P
R114 1.5K
R115 1.5K
R118 1/4W220
R120 1/4W470
C106 680P
COMPARATOR
GATE DRIVE

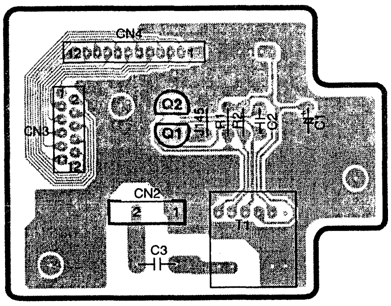

+VCC
⚠Q16
FX30KMJ-3
C51
50V220
L7
60μH
⚠Q17
FS30KMJ-3
C53
2.2
TF
-VCC
C52
50V220
❼ SPL
❽ SPR
C59
50V1.5
⚠F
R74
5W22
⚠F R75
5W22
C60
50V1.5
C61
50V47
C62
50V47
CN4
6 SPR-
5 SPR+
4 TWR+
3 SPL-
2 SPL+
1 TWL+
CN5
4 MSR+
3 SPR-
2 SPL-
1 MSL+
+VCC
⚠Q18
FX30KMJ-3
L8
60μH
⚠Q19
FS30KMJ-3
C57
2.2
TF
-VCC
⚠F
R79
2W0.1
⚠F
R78
2W0.1
L5
130μH×3
LOL
LOR
⚠F
R20
1/4W4.7
R16
330K
C14
10P
⚠F
R21
1/4W22
+15
Q12
R15
220K
SUMR
IC1B
R18
22
❻ HPR
Q13
+15HM
R19
2.2K
C16
0.1
CN3
6 HPS
5 HPR
4 HPL
3 E
2 LEDA
1 LEDK
R4
3.3K
L6
80μH
IC1
M5215AL
⚠F
R26
1/4W4.7
R23
330K
HEADPHONE
AMPLIFIER
C15
10P
Q12,14
2SD592ARS
Q13,15
2SB621ARS
Q14
R22
220K
SUML
IC1
R24
22
❺ HPL
Q15
-15
R25
2.2K
⚠F
R27
1/4W22
-15


SP2
16cm,6 Ω
SP6
6.5cm,8 Ω
SP1
16cm,6 Ω
SP5
6.5cm,8 Ω
SP4
13cm × 6cm,8 Ω
SP3
13cm × 6cm,8 Ω

C JACK2 CIRCUIT

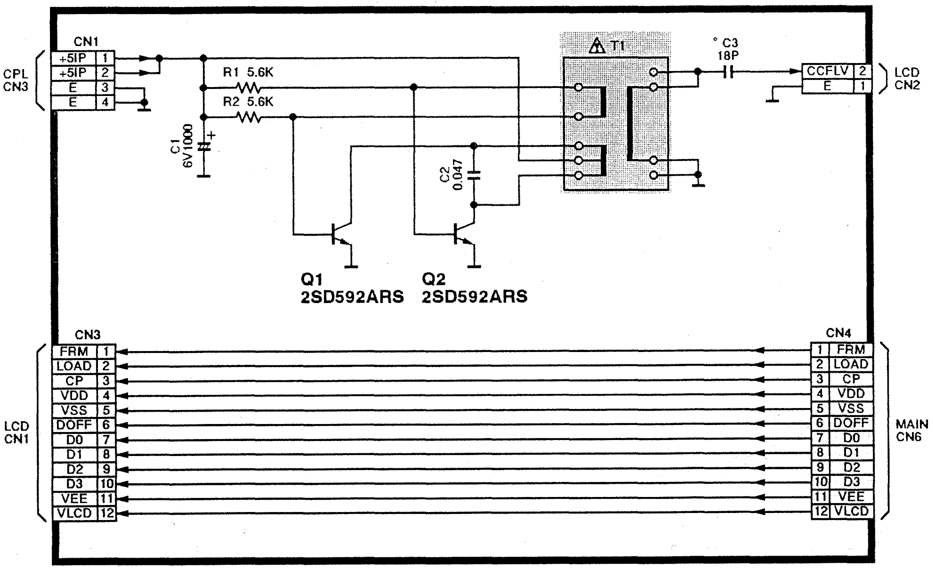

MAIN
CN14
CN3
MIC 5
MSNS 4
E 3
-15 2
+15 1
-15
+15
VR1
50K
MIC
VOLUME
C7
50V1
R11
2.2K
C6 0.1
R10 68K
IC1A
-15
IC1
M5218AL
R9
22K
C5 47P
R8 100K
IC1B
+15
R7
2.2K
R6
4.7K
C4
50V1
L2
130μH × 3
R5
100K
C10
0.1
C9
0.0068
C11
50V1
Q1
2SC1815GR
R12
1.5K
R13
2.2K
D1
MA165
C8
6V47
JK3
MIC
JK2
R1
1W47
R2
1W47
HEADPHONE2
JK1
R3
1W47
R4
1W47
HEADPHONE1
CN2
HPS 6
HPR 5
HPL 4
E 3
LEDA 2
LEDK 1
L1
130μH × 3
C1
0.047
C2
0.047
C3
0.1
CN1
1 LEDA
2 LEDK
3 •
D2
SEL4214RLC05
POWER
INDICATOR

F INVL P.C.B.



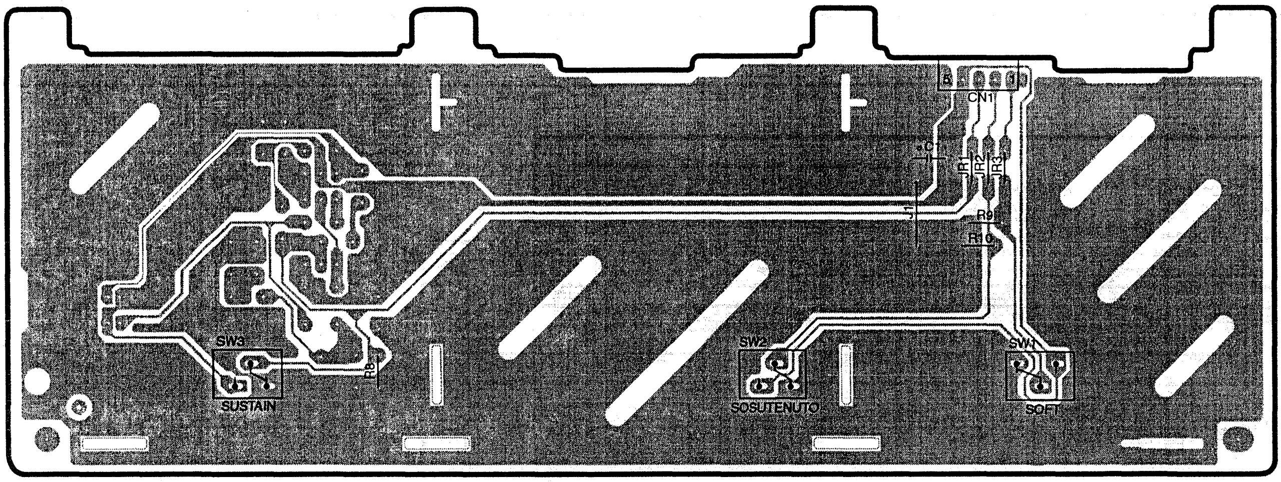
CN4
12
1
CN3
1
12
Q2
Q1
JR1
R1
R2
C2
C1
CN2
2
1
T1
C3

F INVL CIRCUIT



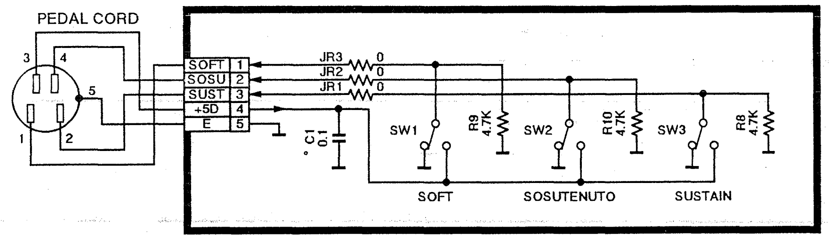
CN1
+5IP 1
+5IP 2
E 3
E 4
CPL
CN3
R1 5.6K
R2 5.6K
C1
6V1000
T1
C3
18P
C2
0.047
CCFLV 2
E 1
LCD
CN2
Q1
2SD592ARS
Q2
2SD592ARS
CN3
FRM 1
LOAD 2
CP 3
VDD 4
VSS 5
DOFF 6
D0 7
D1 8
D2 9
D3 10
VEE 11
VLCD 12
LCD
CN1
CN4
1 FRM
2 LOAD
3 CP
4 VDD
5 VSS
6 DOFF
7 D0
8 D1
9 D2
10 D3
11 VEE
12 VLCD
MAIN
CN6

G PKB P.C.B.



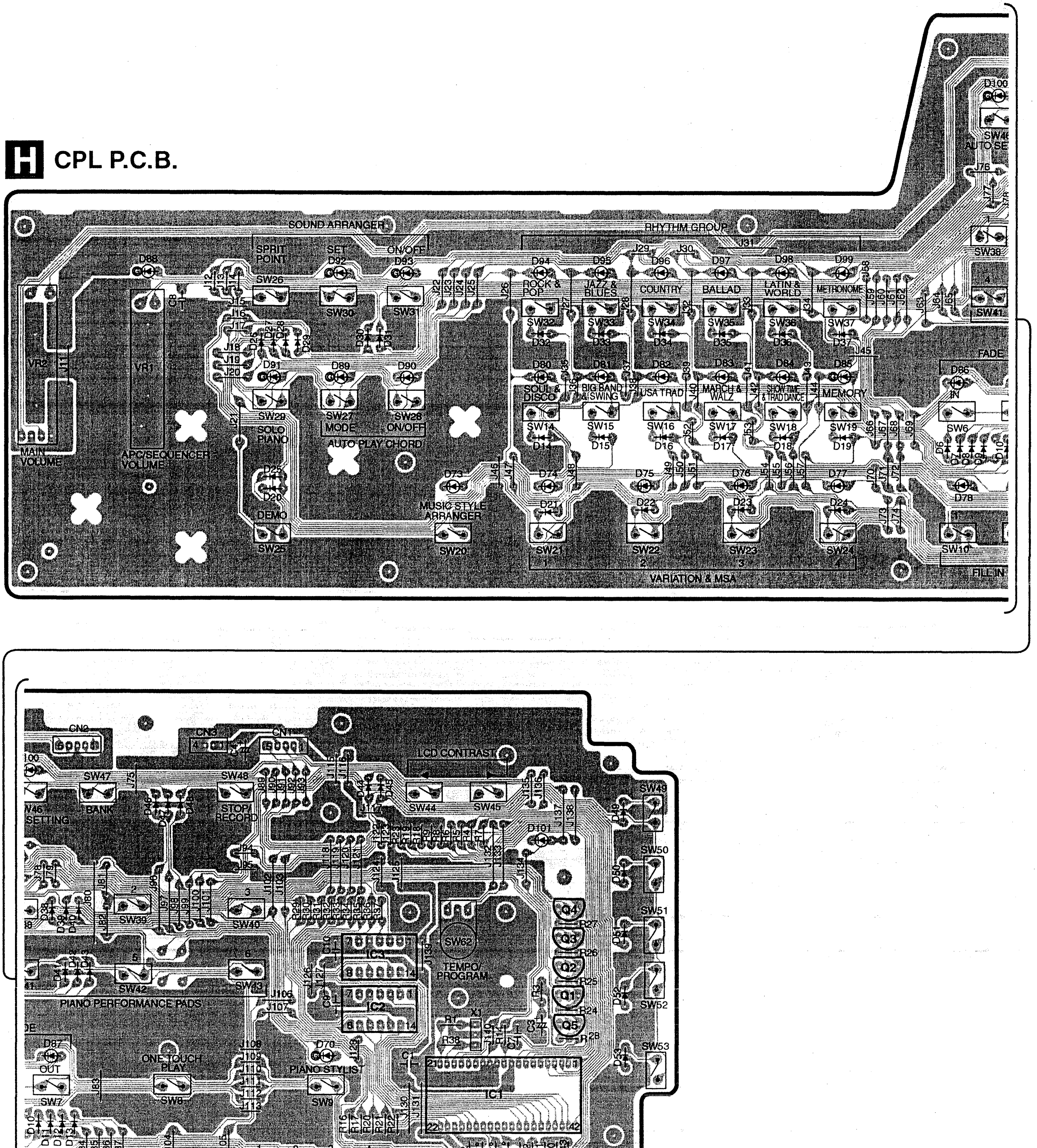
CN1
C1
JR1
JR2
JR3
R9
R10
R8
SW3
SUSTAIN
SW2
SOSUTENUTO
SW1
SOFT

G PKB CIRCUIT

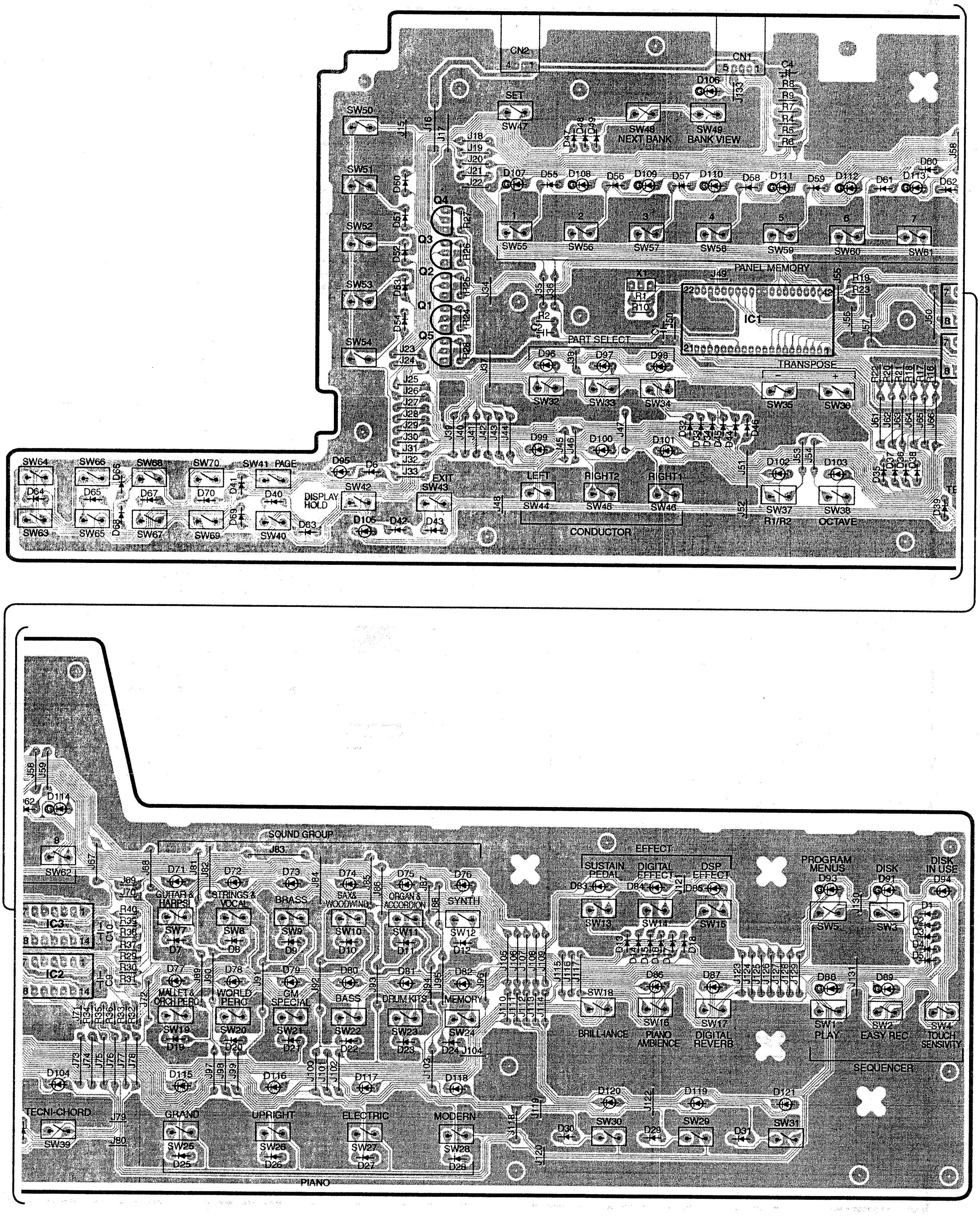


PEDAL CORD
3
4
5
1
2
SOFT 1
SOSU 2
SUST 3
+5D 4
E 5
JR3 0
JR2 0
JR1 0
C1
0.1
SW1
R9
4.7K
SW2
R10
4.7K
SW3
R8
4.7K
SOFT
SOSUTENUTO
SUSTAIN

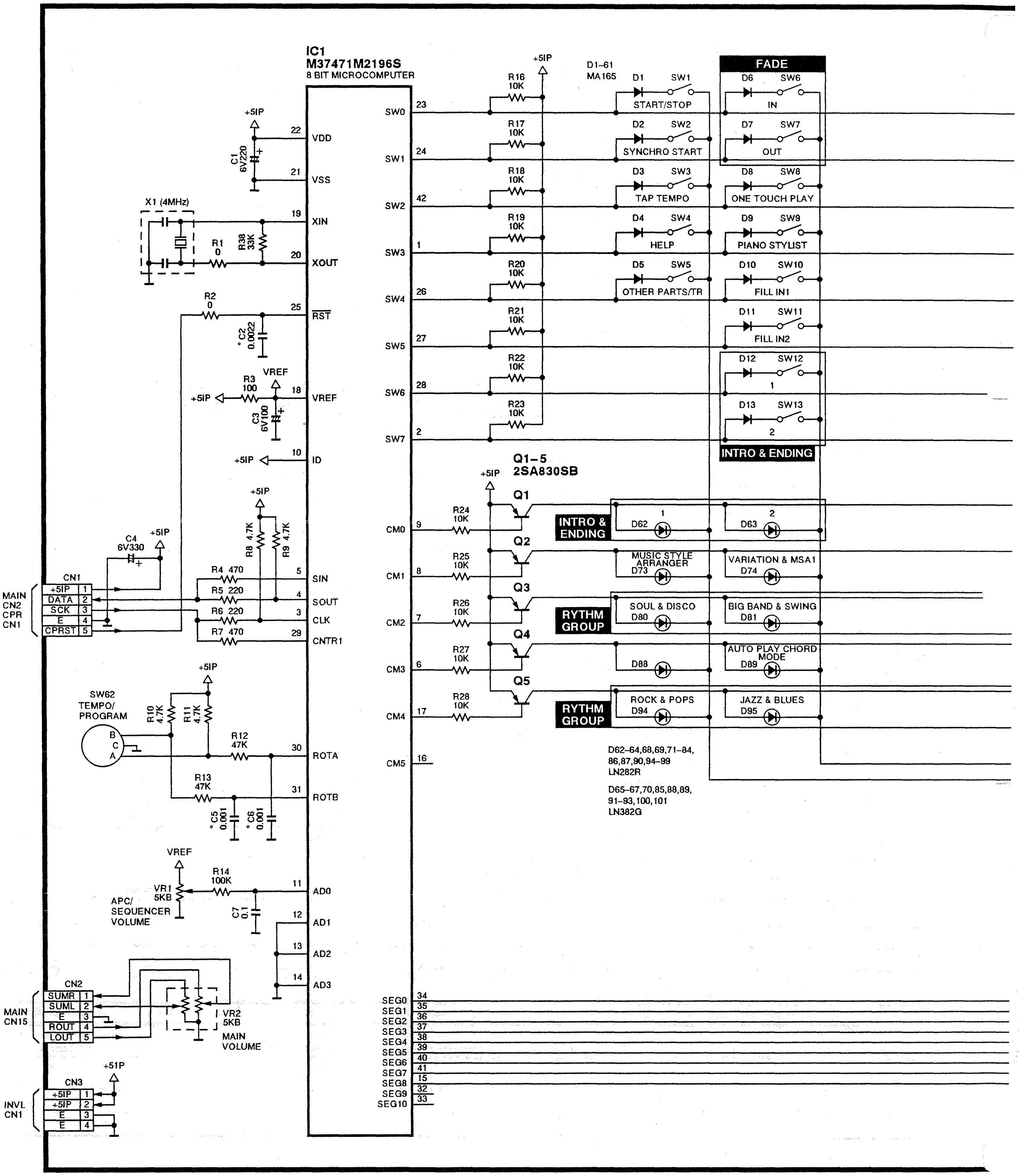
H CPL P.C.B.

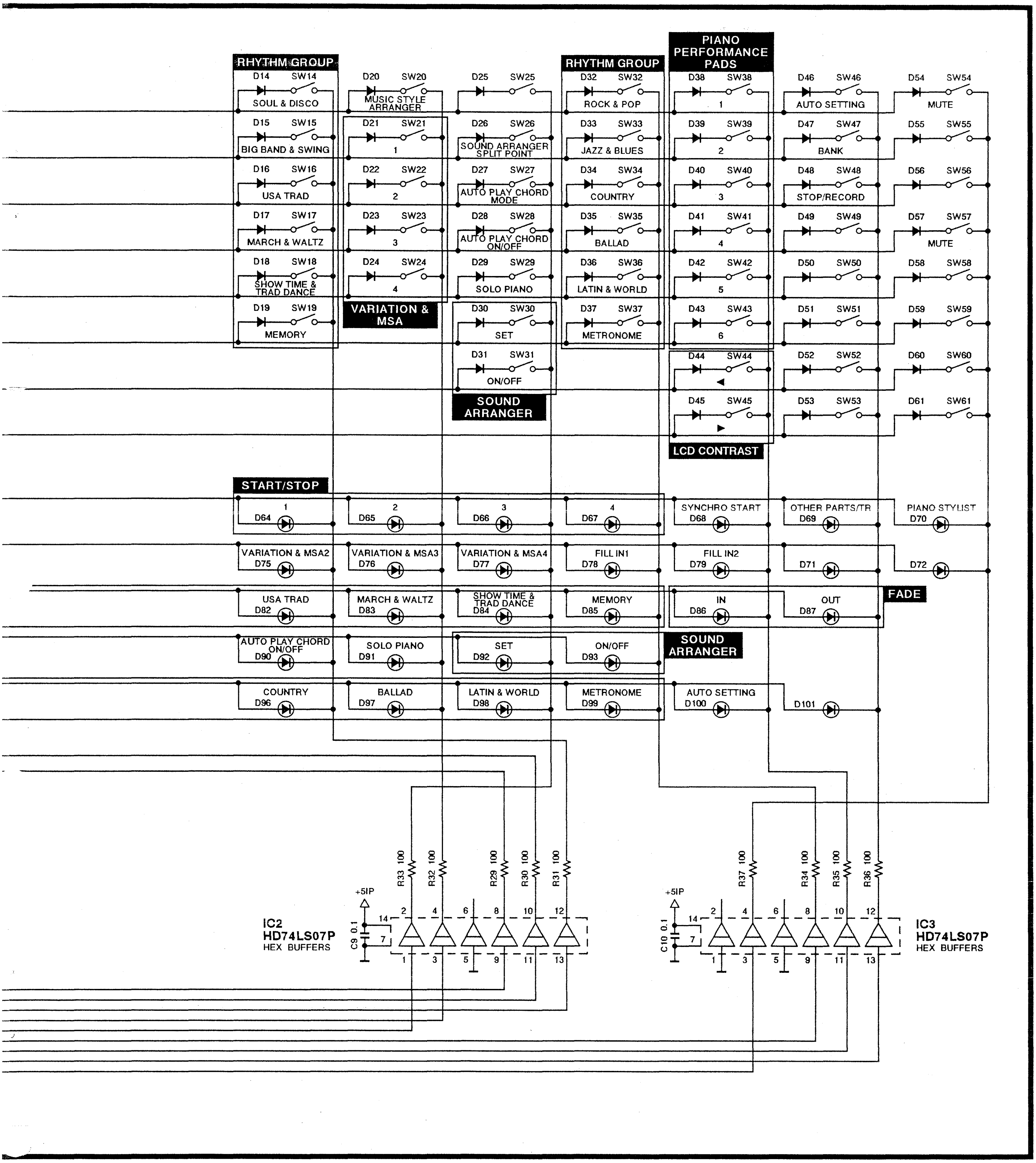

SOUND ARRANGER
RHYTHM GROUP
SPRIT POINT
SET
ON/OFF
ROCK & POP
JAZZ & BLUES
COUNTRY
BALLAD
LATIN & WORLD
METRONOME
SOUL & DISCO
BIG BAND & SWING
USA TRAD
MARCH & WALZ
SHOW TIME & TRAD DANCE
MEMORY
FADE
IN
AUTO SE
VR2
VR1
MAIN VOLUME
APC/SEQUENCER VOLUME
SOLO PIANO
MODE
ON/OFF
AUTO PLAY CHORD
DEMO
MUSIC STYLE ARRANGER
VARIATION & MSA
FILL IN
CN2
CN3
CN1
LCD CONTRAST
SW47
SW48
BANK
STOP/ RECORD
SETTING
SW44
SW45
SW49
SW50
SW51
SW52
SW53
SW39
SW40
SW42
SW43
PIANO PERFORMANCE PADS
IC3
IC2
IC1
SW62
TEMPO/ PROGRAM
Q1
Q2
Q3
Q4
Q5
OUT
ONE TOUCH PLAY
PIANO STYLIST
SW7
SW8
SW9
SYNCHRO START
TAP TEMPO
HELP
OTHER PARTS/TR
MUTE
SW11
SW12
SW13
SW1
SW2
SW3
SW4
SW5
INTRO & ENDING
START/STOP
SW54
SW55
SW56
SW57
SW58
SW59
SW60
SW61

1 CPR P.C.B.

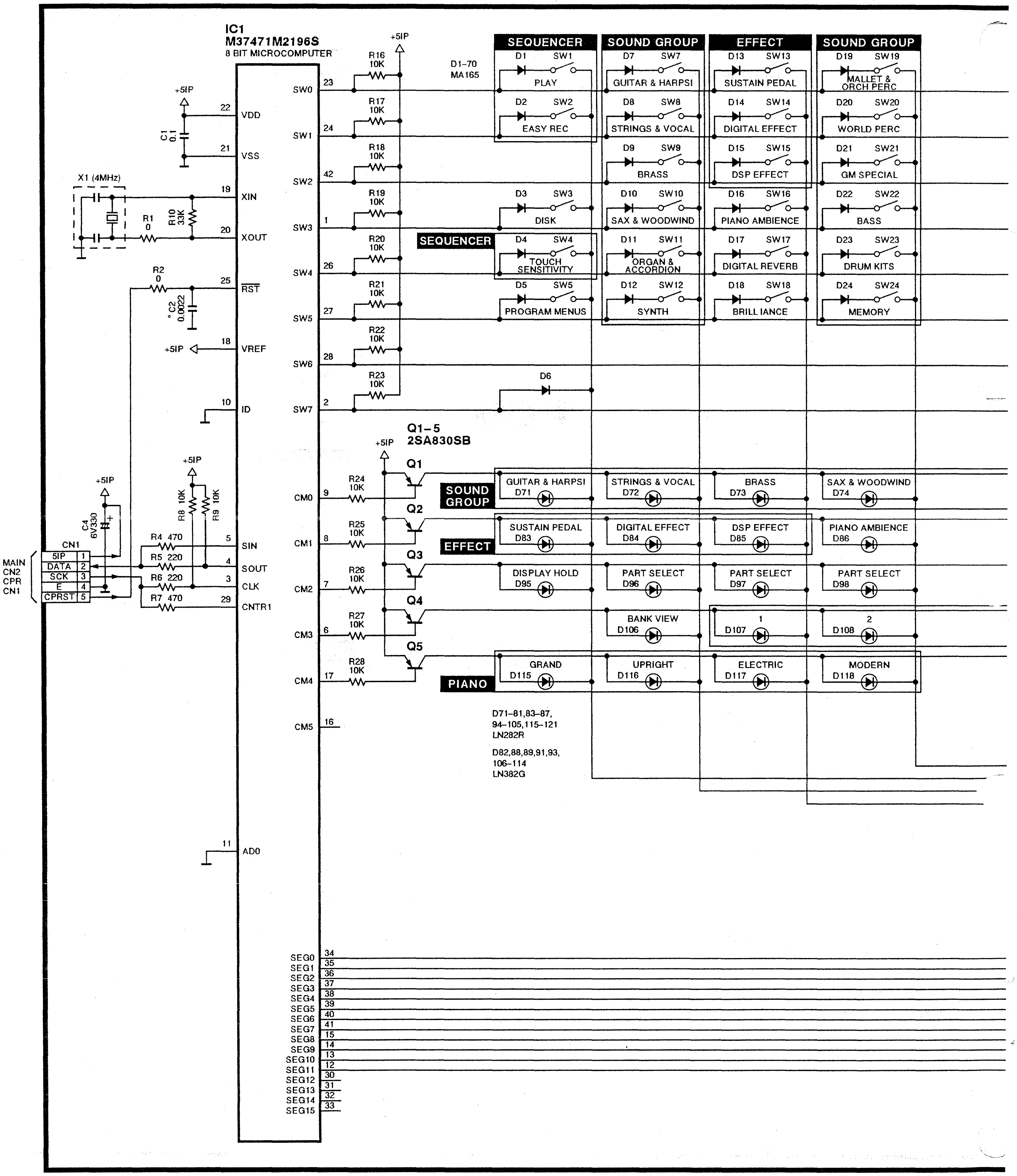

CN2
CN1
C4
R8
R9
R7
R4
R5
R6
D106
J33
SET
SW47
SW48
NEXT BANK
SW49
BANK VIEW
SW50
SW51
SW52
SW53
SW54
J15
J16
J17
J18
J19
J20
J21
J22
D47
D48
D49
D50
D51
D52
D53
D54
Q1
Q2
Q3
Q4
Q5
R24
R25
R26
R27
R28
D107
D55
D108
D56
D109
D57
D110
D58
D111
D59
D112
D61
D113
D60
D62
J58
1
2
3
4
5
6
7
SW55
SW56
SW57
SW58
SW59
SW60
SW61
PANEL MEMORY
J49
J55
R19
R23
X1
R1
R10
R2
C2
IC1
J50
J56
J57
J60
J34
J35
J36
PART SELECT
D96
D97
D98
J23
J24
J25
J26
J27
J28
J29
J30
J31
J32
J33
J37
J38
TRANSPOSE
SW32
SW33
SW34
SW35
SW36
R22
R20
R21
R18
R17
R16
J39
J40
J41
J42
J43
J44
J45
J46
J47
D99
D100
D101
D32
D33
D34
D43
D44
D46
J51
J53
J54
D102
D103
J61
J62
J63
J64
J65
J66
D35
D36
D37
D38
D39
SW64
SW66
SW68
SW70
SW41
PAGE
D66
D64
D65
D67
D70
D41
D40
D68
D69
SW63
SW65
SW67
SW69
SW40
D95
D6
EXIT
DISPLAY HOLD
SW42
SW43
D63
D105
D42
D43
LEFT
RIGHT2
RIGHT1
SW44
SW45
SW46
J48
J52
SW37
R1/R2
SW38
OCTAVE
CONDUCTOR
J58
J59
D62
D114
8
SW62
J67
J68
SOUND GROUP
J83
J69
J70
D71
D72
D73
D74
D75
D76
GUITAR & HARPSI
STRINGS & VOCAL
BRASS
SAX & WOODWIND
ORGAN & ACCORDION
SYNTH
J84
J85
J86
J87
J88
SW7
SW8
SW9
SW10
SW11
SW12
D7
D8
D9
D10
D11
D12
IC3
IC2
R40
R39
R30
R37
R29
R31
C10
C9
D77
D78
D79
D80
D81
D82
MALLET & ORCH PERC
WORLD PERC
GM SPECIAL
BASS
DRUM KITS
MEMORY
J89
J90
J91
J92
J93
J94
J95
J96
SW19
SW20
SW21
SW22
SW23
SW24
D19
D20
D21
D22
D23
D24
J104
J71
J72
J73
J74
J75
J76
J77
J78
R34
R35
R36
R33
R32
D104
D115
D116
D117
D118
J97
J98
J99
J100
J101
J102
J103
TECNI-CHORD
J79
J80
SW39
GRAND
UPRIGHT
ELECTRIC
MODERN
SW25
SW26
SW27
SW28
D25
D26
D27
D28
PIANO
EFFECT
SUSTAIN PEDAL
DIGITAL EFFECT
DSP EFFECT
D83
D84
D85
J121
SW13
SW14
SW15
D13
D14
D15
D16
D17
D18
J105
J106
J107
J108
J109
J110
J111
J112
J113
J114
J115
J116
J117
SW18
BRILLIANCE
D86
D87
SW16
SW17
PIANO AMBIENCE
DIGITAL REVERB
J123
J124
J125
J126
J127
J128
J129
J118
J119
J120
D120
D119
D121
J122
D30
SW30
D29
SW29
D31
SW31
PROGRAM MENUS
DISK
DISK IN USE
D93
D91
D94
J130
SW5
SW3
D1
D2
D3
D4
D5
J131
D88
D89
SW1
PLAY
SW2
EASY REC
SW4
TOUCH SENSIVITY
SEQUENCER

H CPL CIRCUIT

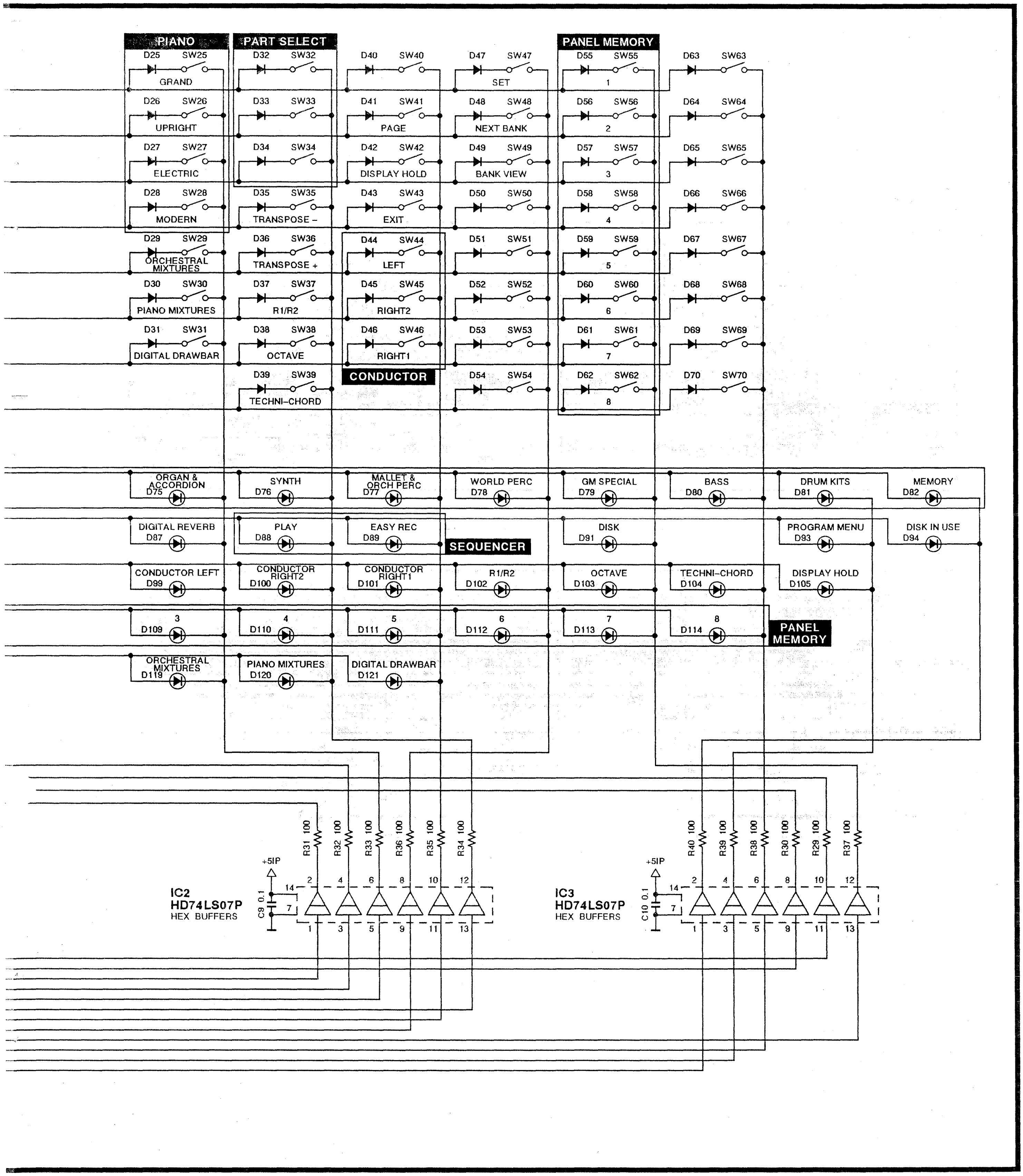

IC1
M37471M2196S
8 BIT MICROCOMPUTER
VDD
VSS
XIN
XOUT
RST
VREF
ID
SIN
SOUT
CLK
CNTR1
ROTA
ROTB
AD0
AD1
AD2
AD3
SW0
SW1
SW2
SW3
SW4
SW5
SW6
SW7
CM0
CM1
CM2
CM3
CM4
CM5
SEG0
SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
SEG7
SEG8
SEG9
SEG10
+5IP
C1 6V220
X1 (4MHz)
R1 0
R38 33K
R2 0
C2 0.0022
R3 100
VREF
C3 6V100
C4 6V330
R8 4.7K
R9 4.7K
R4 470
R5 220
R6 220
R7 470
CN1
+5IP
DATA
SCK
E
CPRST
MAIN CN2 CPR CN1
SW62 TEMPO/ PROGRAM
B
C
A
R10 4.7K
R11 4.7K
R12 47K
R13 47K
C5 0.001
C6 0.001
R14 100K
VR1 5KB
APC/ SEQUENCER VOLUME
C7 0.1
CN2
SUMR
SUML
E
ROUT
LOUT
MAIN CN15
VR2 5KB
MAIN VOLUME
CN3
+5IP
+5IP
E
E
INVL CN1
R16 10K
R17 10K
R18 10K
R19 10K
R20 10K
R21 10K
R22 10K
R23 10K
D1–61 MA165
D1 SW1 START/STOP
D2 SW2 SYNCHRO START
D3 SW3 TAP TEMPO
D4 SW4 HELP
D5 SW5 OTHER PARTS/TR
FADE
D6 SW6 IN
D7 SW7 OUT
D8 SW8 ONE TOUCH PLAY
D9 SW9 PIANO STYLIST
D10 SW10 FILL IN1
D11 SW11 FILL IN2
D12 SW12 1
D13 SW13 2
INTRO & ENDING
Q1–5 2SA830SB
Q1
Q2
Q3
Q4
Q5
R24 10K
R25 10K
R26 10K
R27 10K
R28 10K
INTRO & ENDING
D62 1
D63 2
MUSIC STYLE ARRANGER D73
VARIATION & MSA1 D74
RYTHM GROUP
SOUL & DISCO D80
BIG BAND & SWING D81
D88
AUTO PLAY CHORD MODE D89
RYTHM GROUP
ROCK & POPS D94
JAZZ & BLUES D95
D62–64,68,69,71–84, 86,87,90,94–99 LN282R
D65–67,70,85,88,89, 91–93,100,101 LN382G


RHYTHM GROUP
D14 SW14 SOUL & DISCO
D15 SW15 BIG BAND & SWING
D16 SW16 USA TRAD
D17 SW17 MARCH & WALTZ
D18 SW18 SHOW TIME & TRAD DANCE
D19 SW19 MEMORY
D20 SW20 MUSIC STYLE ARRANGER
D21 SW21 1
D22 SW22 2
D23 SW23 3
D24 SW24 4
VARIATION & MSA
D25 SW25
D26 SW26 SOUND ARRANGER SPLIT POINT
D27 SW27 AUTO PLAY CHORD MODE
D28 SW28 AUTO PLAY CHORD ON/OFF
D29 SW29 SOLO PIANO
D30 SW30 SET
D31 SW31 ON/OFF
SOUND ARRANGER
RHYTHM GROUP
D32 SW32 ROCK & POP
D33 SW33 JAZZ & BLUES
D34 SW34 COUNTRY
D35 SW35 BALLAD
D36 SW36 LATIN & WORLD
D37 SW37 METRONOME
PIANO PERFORMANCE PADS
D38 SW38 1
D39 SW39 2
D40 SW40 3
D41 SW41 4
D42 SW42 5
D43 SW43 6
D44 SW44 ◄
D45 SW45 ►
LCD CONTRAST
D46 SW46 AUTO SETTING
D47 SW47 BANK
D48 SW48 STOP/RECORD
D49 SW49
D50 SW50
D51 SW51
D52 SW52
D53 SW53
D54 SW54 MUTE
D55 SW55
D56 SW56
D57 SW57 MUTE
D58 SW58
D59 SW59
D60 SW60
D61 SW61
START/STOP
1 D64
2 D65
3 D66
4 D67
SYNCHRO START D68
OTHER PARTS/TR D69
PIANO STYLIST D70
VARIATION & MSA2 D75
VARIATION & MSA3 D76
VARIATION & MSA4 D77
FILL IN1 D78
FILL IN2 D79
D71
D72
USA TRAD D82
MARCH & WALTZ D83
SHOW TIME & TRAD DANCE D84
MEMORY D85
IN D86
OUT D87
FADE
AUTO PLAY CHORD ON/OFF D90
SOLO PIANO D91
SET D92
ON/OFF D93
SOUND ARRANGER
COUNTRY D96
BALLAD D97
LATIN & WORLD D98
METRONOME D99
AUTO SETTING D100
D101
R33 100
R32 100
R29 100
R30 100
R31 100
R37 100
R34 100
R35 100
R36 100
+5IP
C9 0.1
C10 0.1
IC2
HD74LS07P
HEX BUFFERS
IC3
HD74LS07P
HEX BUFFERS
14
7
2
4
6
8
10
12
1
3
5
9
11
13

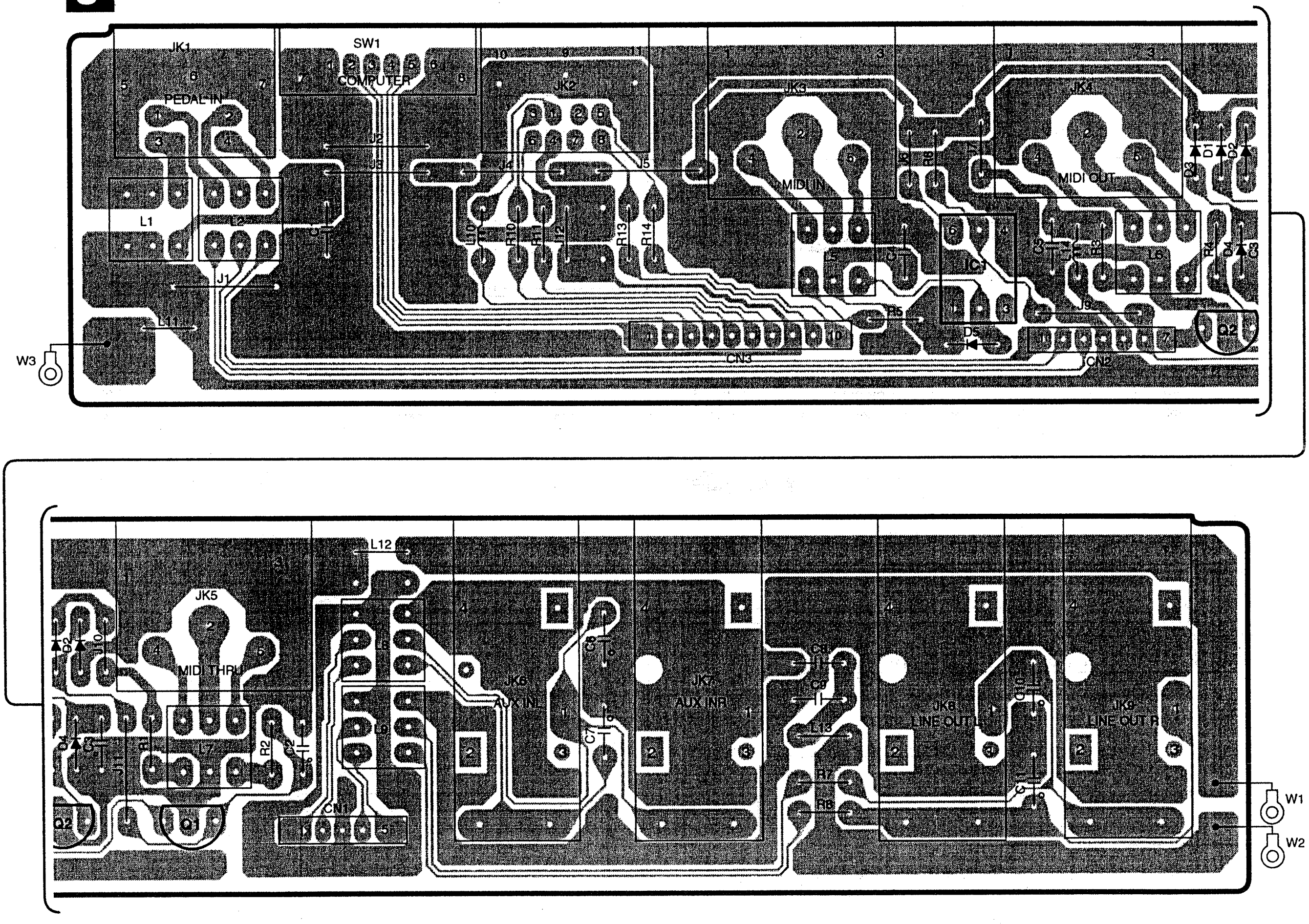
I CPR CIRCUIT



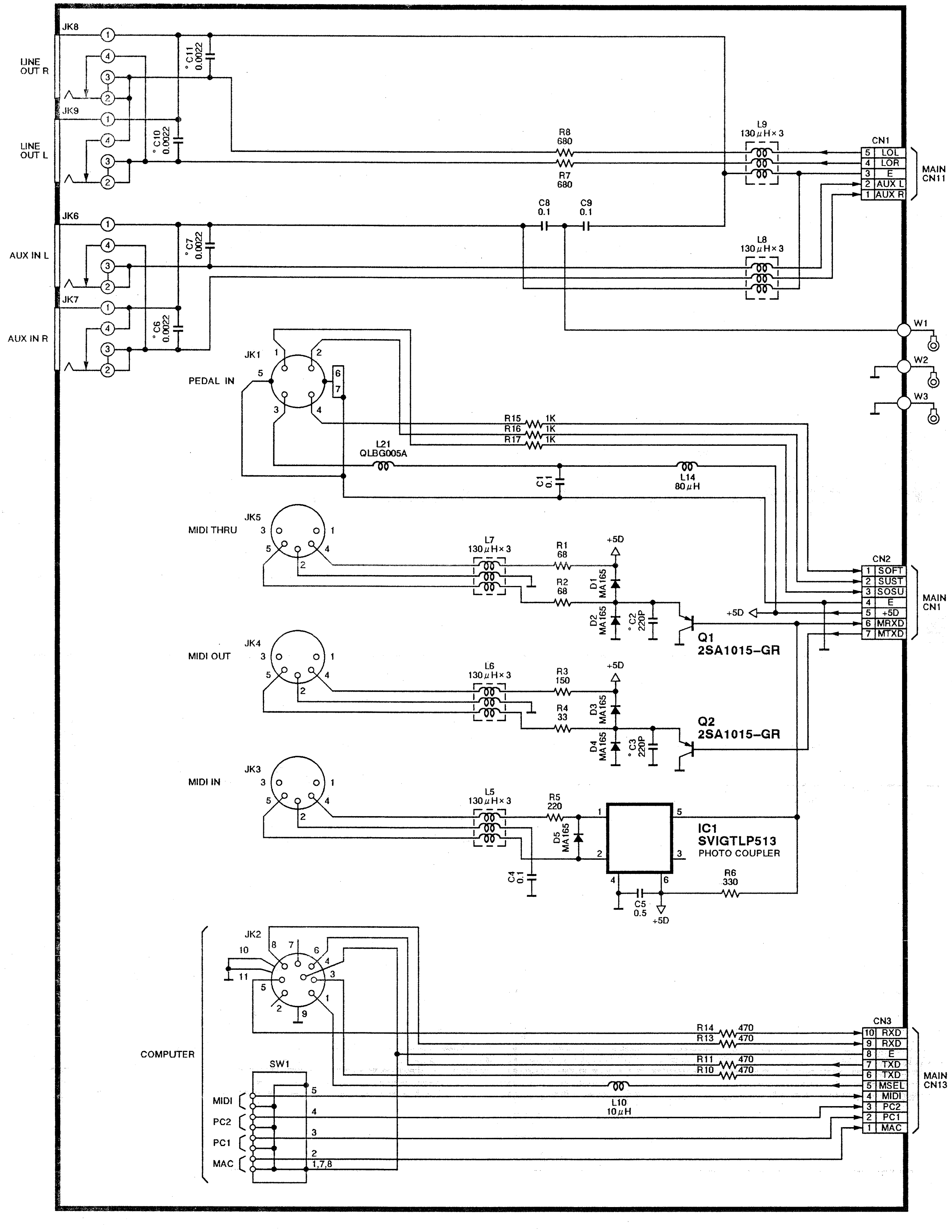
IC1
M37471M2196S
8 BIT MICROCOMPUTER
+5IP
22 VDD
C1 0.1
21 VSS
X1 (4MHz)
19 XIN
R1 0
R10 33K
20 XOUT
R2 0
25 RST
C2 0.0022
18 VREF
10 ID
11 AD0
+5IP
R8 10K
R9 10K
+5IP
C4 6V330
CN1
MAIN CN2
CPR CN1
5IP 1
DATA 2
SCK 3
E 4
CPRST 5
R4 470
R5 220
R6 220
R7 470
5 SIN
4 SOUT
3 CLK
29 CNTR1
SW0 23
SW1 24
SW2 42
SW3 1
SW4 26
SW5 27
SW6 28
SW7 2
R16 10K
R17 10K
R18 10K
R19 10K
R20 10K
R21 10K
R22 10K
R23 10K
D1-70
MA165
SEQUENCER
D1 SW1 PLAY
D2 SW2 EASY REC
D3 SW3 DISK
SEQUENCER
D4 SW4 TOUCH SENSITIVITY
D5 SW5 PROGRAM MENUS
D6
SOUND GROUP
D7 SW7 GUITAR & HARPSI
D8 SW8 STRINGS & VOCAL
D9 SW9 BRASS
D10 SW10 SAX & WOODWIND
D11 SW11 ORGAN & ACCORDION
D12 SW12 SYNTH
EFFECT
D13 SW13 SUSTAIN PEDAL
D14 SW14 DIGITAL EFFECT
D15 SW15 DSP EFFECT
D16 SW16 PIANO AMBIENCE
D17 SW17 DIGITAL REVERB
D18 SW18 BRILLIANCE
SOUND GROUP
D19 SW19 MALLET & ORCH PERC
D20 SW20 WORLD PERC
D21 SW21 GM SPECIAL
D22 SW22 BASS
D23 SW23 DRUM KITS
D24 SW24 MEMORY
Q1-5
2SA830SB
+5IP
Q1
Q2
Q3
Q4
Q5
CM0 9
CM1 8
CM2 7
CM3 6
CM4 17
CM5 16
R24 10K
R25 10K
R26 10K
R27 10K
R28 10K
SOUND GROUP
GUITAR & HARPSI D71
STRINGS & VOCAL D72
BRASS D73
SAX & WOODWIND D74
EFFECT
SUSTAIN PEDAL D83
DIGITAL EFFECT D84
DSP EFFECT D85
PIANO AMBIENCE D86
DISPLAY HOLD D95
PART SELECT D96
PART SELECT D97
PART SELECT D98
BANK VIEW D106
1 D107
2 D108
PIANO
GRAND D115
UPRIGHT D116
ELECTRIC D117
MODERN D118
D71-81,83-87,
94-105,115-121
LN282R
D82,88,89,91,93,
106-114
LN382G
SEG0 34
SEG1 35
SEG2 36
SEG3 37
SEG4 38
SEG5 39
SEG6 40
SEG7 41
SEG8 15
SEG9 14
SEG10 13
SEG11 12
SEG12 30
SEG13 31
SEG14 32
SEG15 33


PIANO
PART SELECT
PANEL MEMORY
D25 SW25 GRAND
D26 SW26 UPRIGHT
D27 SW27 ELECTRIC
D28 SW28 MODERN
D29 SW29 ORCHESTRAL MIXTURES
D30 SW30 PIANO MIXTURES
D31 SW31 DIGITAL DRAWBAR
D32 SW32
D33 SW33
D34 SW34
D35 SW35 TRANSPOSE –
D36 SW36 TRANSPOSE +
D37 SW37 R1/R2
D38 SW38 OCTAVE
D39 SW39 TECHNI–CHORD
D40 SW40
D41 SW41 PAGE
D42 SW42 DISPLAY HOLD
D43 SW43 EXIT
D44 SW44 LEFT
D45 SW45 RIGHT2
D46 SW46 RIGHT1
CONDUCTOR
D47 SW47 SET
D48 SW48 NEXT BANK
D49 SW49 BANK VIEW
D50 SW50
D51 SW51
D52 SW52
D53 SW53
D54 SW54
D55 SW55 1
D56 SW56 2
D57 SW57 3
D58 SW58 4
D59 SW59 5
D60 SW60 6
D61 SW61 7
D62 SW62 8
D63 SW63
D64 SW64
D65 SW65
D66 SW66
D67 SW67
D68 SW68
D69 SW69
D70 SW70
ORGAN & ACCORDION D75
SYNTH D76
MALLET & ORCH PERC D77
WORLD PERC D78
GM SPECIAL D79
BASS D80
DRUM KITS D81
MEMORY D82
DIGITAL REVERB D87
PLAY D88
EASY REC D89
SEQUENCER
DISK D91
PROGRAM MENU D93
DISK IN USE D94
CONDUCTOR LEFT D99
CONDUCTOR RIGHT2 D100
CONDUCTOR RIGHT1 D101
R1/R2 D102
OCTAVE D103
TECHNI–CHORD D104
DISPLAY HOLD D105
3 D109
4 D110
5 D111
6 D112
7 D113
8 D114
PANEL MEMORY
ORCHESTRAL MIXTURES D119
PIANO MIXTURES D120
DIGITAL DRAWBAR D121
R31 100
R32 100
R33 100
R36 100
R35 100
R34 100
+5IP
IC2
HD74LS07P
HEX BUFFERS
C9 0.1
14
7
2 4 6 8 10 12
1 3 5 9 11 13
R40 100
R39 100
R38 100
R30 100
R29 100
R37 100
+5IP
IC3
HD74LS07P
HEX BUFFERS
C10 0.1

J JACK P.C.B.

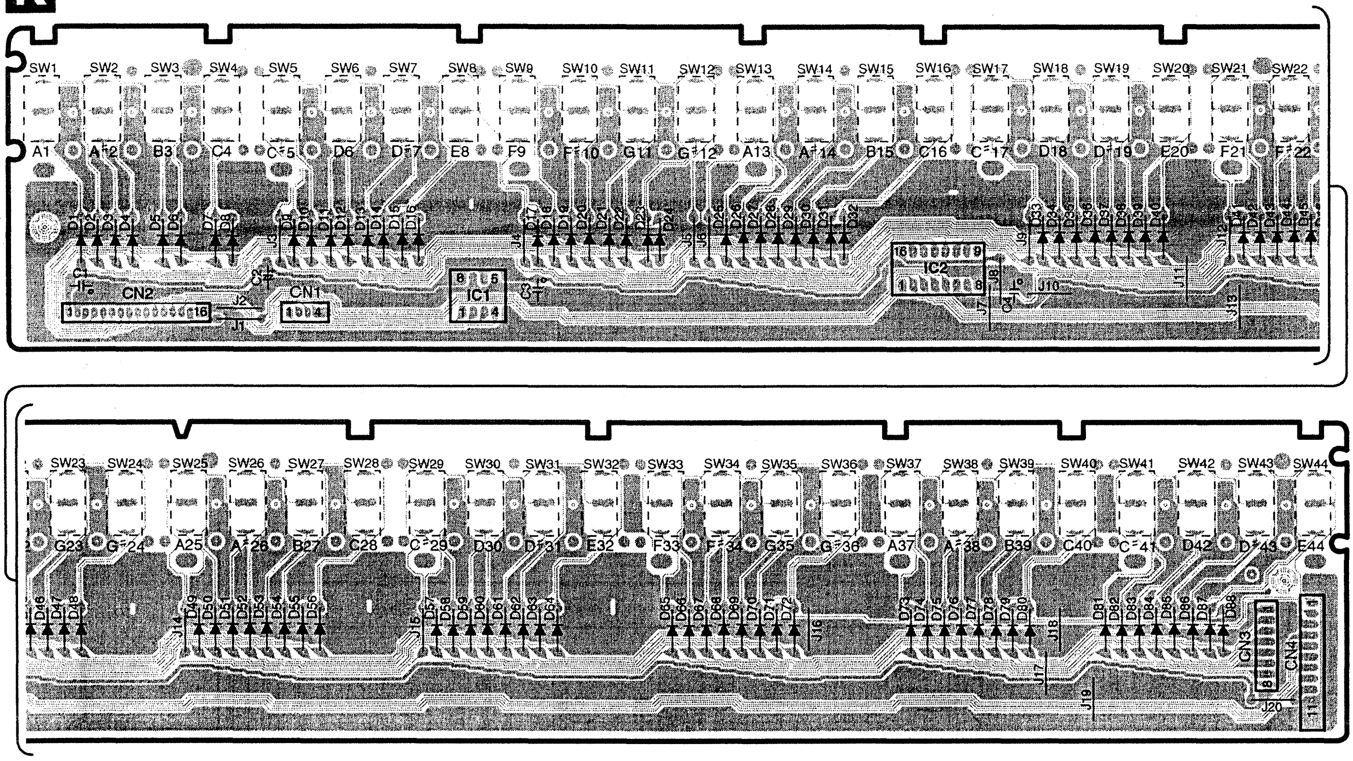

JK1
PEDAL IN
SW1
COMPUTER
JK2
JK3
MIDI IN
JK4
MIDI OUT
L1
L2
J1
J2
J3
J4
J5
R10
R11
R12
R13
R14
L11
W3
CN3
R5
D5
IC1
J9
CN2
L6
Q2
D1
D2
D3
D4
C3
R3
R4
JK5
MIDI THRU
L7
L12
R1
R2
C2
CN1
JK6
AUX IN L
JK7
AUX IN R
JK8
LINE OUT L
JK9
LINE OUT R
C7
C8
C9
C10
L13
R7
R8
W1
W2

J JACK CIRCUIT

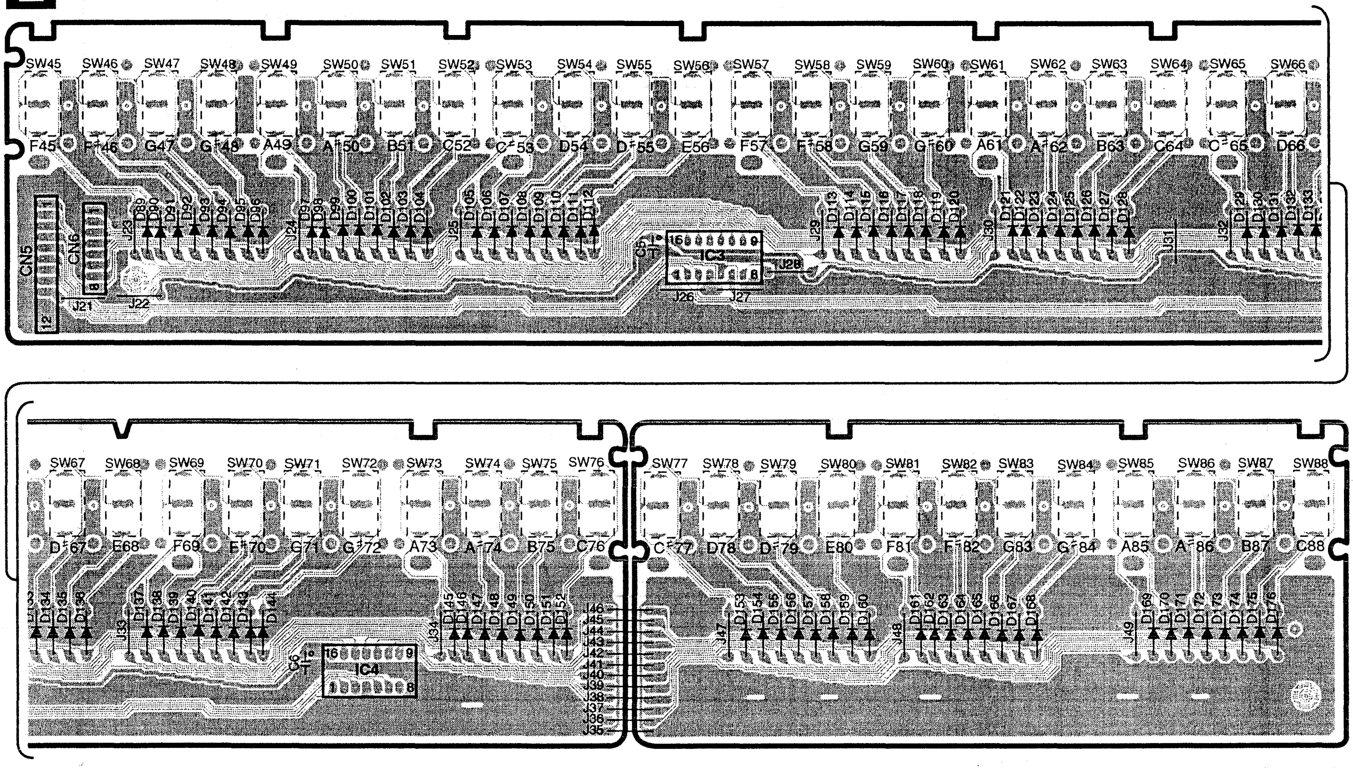


JK8
LINE OUT R
JK9
LINE OUT L
C11 0.0022
C10 0.0022
JK6
AUX IN L
C7 0.0022
JK7
AUX IN R
C6 0.0022
R8 680
R7 680
L9 130μH×3
CN1
5 LOL
4 LOR
3 E
2 AUX L
1 AUX R
MAIN CN11
C8 0.1
C9 0.1
L8 130μH×3
W1
W2
W3
JK1
PEDAL IN
R15 1K
R16 1K
R17 1K
L21 QLBG005A
C1 0.1
L14 80μH
JK5
MIDI THRU
L7 130μH×3
R1 68
R2 68
+5D
D1 MA165
D2 MA165
C2 220P
Q1 2SA1015-GR
CN2
1 SOFT
2 SUST
3 SOSU
4 E
5 +5D
6 MRXD
7 MTXD
MAIN CN1
JK4
MIDI OUT
L6 130μH×3
R3 150
R4 33
D3 MA165
D4 MA165
C3 220P
Q2 2SA1015-GR
JK3
MIDI IN
L5 130μH×3
R5 220
D5 MA165
C4 0.1
IC1 SVIGTLP513
PHOTO COUPLER
C5 0.5
R6 330
JK2
COMPUTER
SW1
MIDI
PC2
PC1
MAC
1,7,8
R14 470
R13 470
R11 470
R10 470
L10 10μH
CN3
10 RXD
9 RXD
8 E
7 TXD
6 TXD
5 MSEL
4 MIDI
3 PC2
2 PC1
1 MAC
MAIN CN13

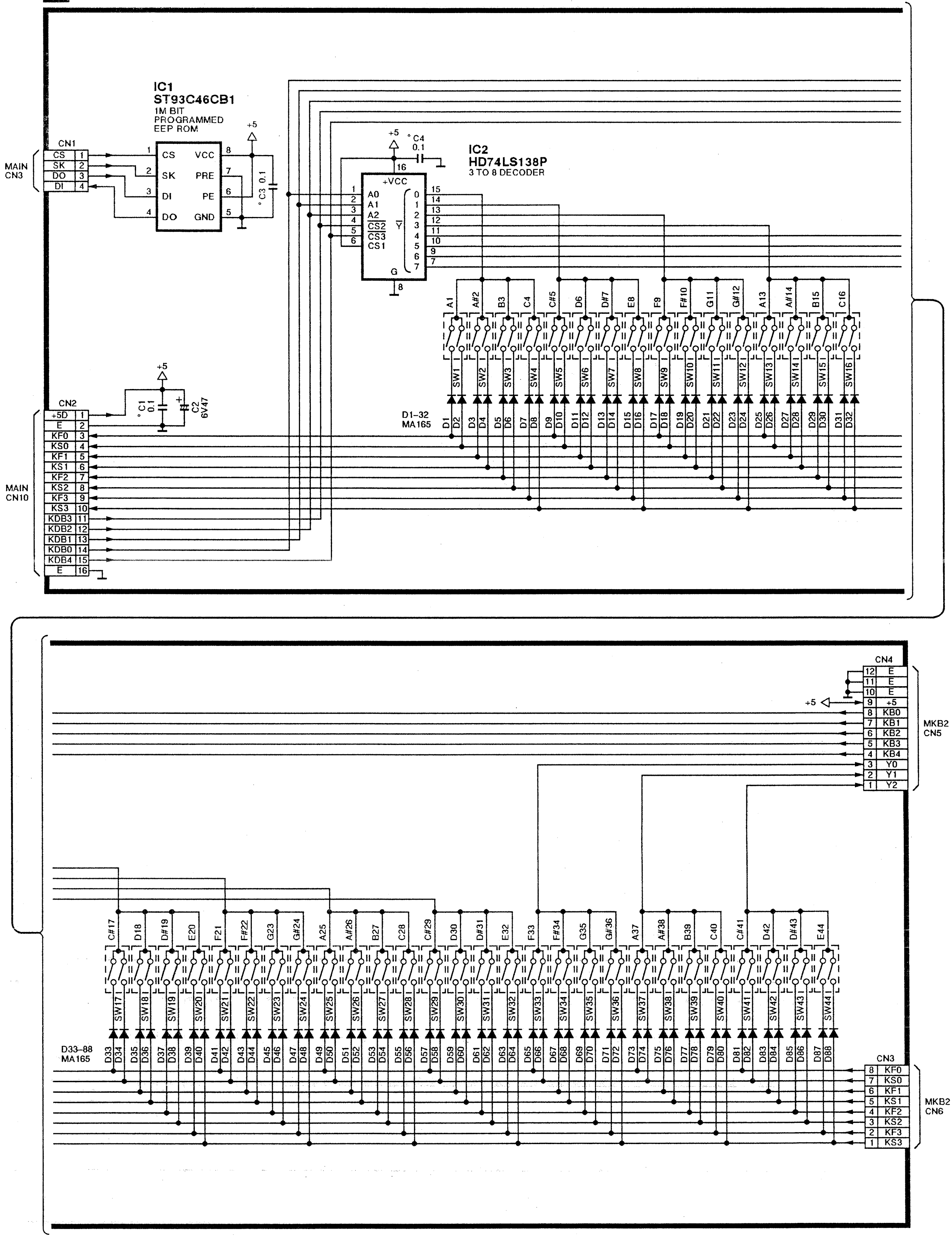
K MKB1 P.C.B.


SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10 SW11 SW12 SW13 SW14 SW15 SW16 SW17 SW18 SW19 SW20 SW21 SW22
A1 A#2 B3 C4 C#5 D6 D#7 E8 F9 F#10 G11 G#12 A13 A#14 B15 C16 C#17 D18 D#19 E20 F21 F#22
CN1
CN2
IC1
IC2
SW23 SW24 SW25 SW26 SW27 SW28 SW29 SW30 SW31 SW32 SW33 SW34 SW35 SW36 SW37 SW38 SW39 SW40 SW41 SW42 SW43 SW44
G23 G#24 A25 A#26 B27 C28 C#29 D30 D#31 E32 F33 F#34 G35 G#36 A37 A#38 B39 C40 C#41 D42 D#43 E44
CN3
CN4

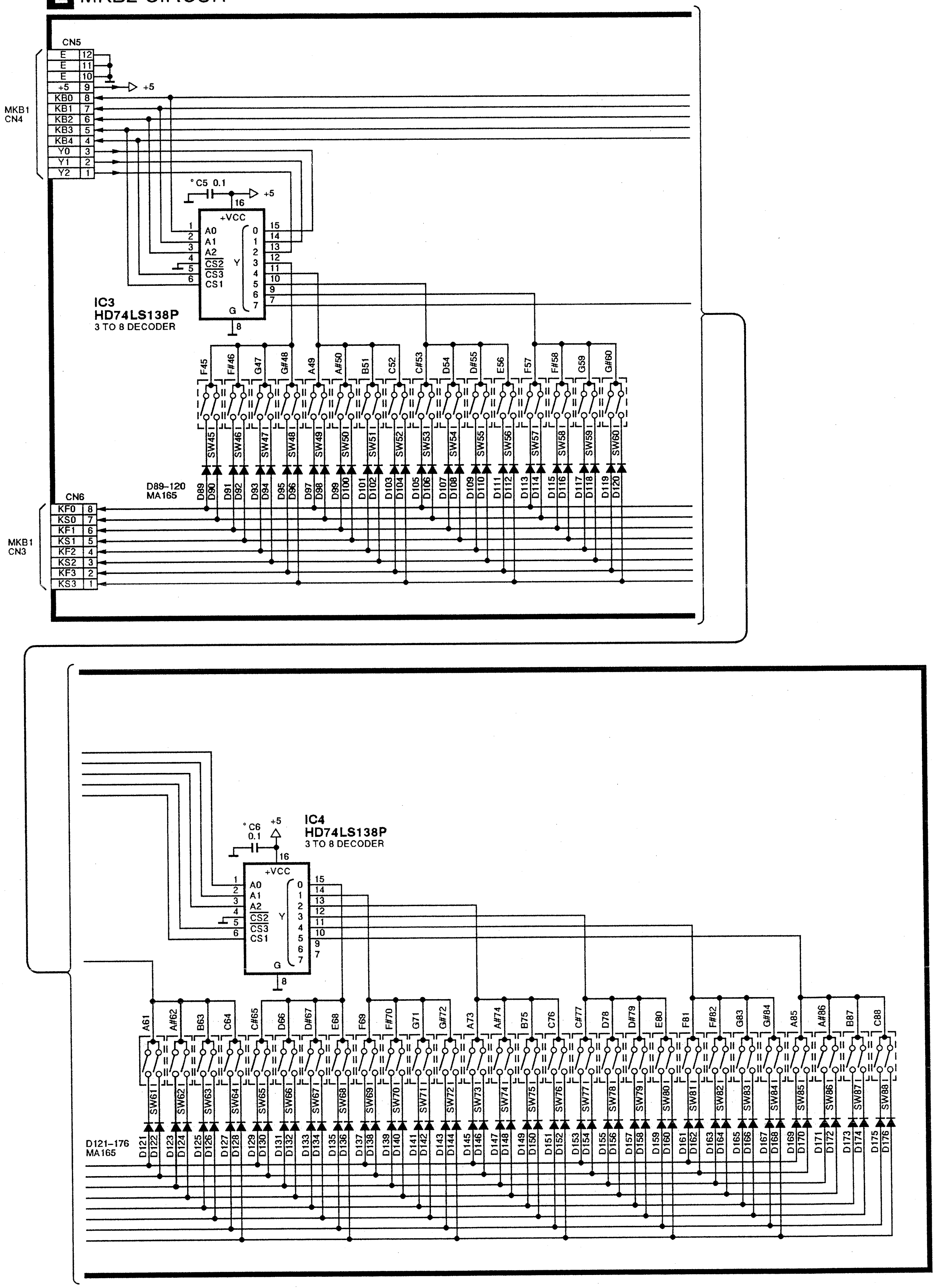
L MKB2 P.C.B.


SW45 SW46 SW47 SW48 SW49 SW50 SW51 SW52 SW53 SW54 SW55 SW56 SW57 SW58 SW59 SW60 SW61 SW62 SW63 SW64 SW65 SW66
F45 F#46 G47 G#48 A49 A#50 B51 C52 C#53 D54 D#55 E56 F57 F#58 G59 G#60 A61 A#62 B63 C64 C#65 D66
CN5
CN6
IC3
SW67 SW68 SW69 SW70 SW71 SW72 SW73 SW74 SW75 SW76 SW77 SW78 SW79 SW80 SW81 SW82 SW83 SW84 SW85 SW86 SW87 SW88
D#67 E68 F69 F#70 G71 G#72 A73 A#74 B75 C76 C#77 D78 D#79 E80 F81 F#82 G83 G#84 A85 A#86 B87 C88
IC4

K MKB1 CIRCUIT


IC1
ST93C46CB1
1M BIT
PROGRAMMED
EEP ROM
CS
SK
DI
DO
VCC
PRE
PE
GND
+5
C3 0.1
MAIN
CN3
CN1
CS 1
SK 2
DO 3
DI 4
IC2
HD74LS138P
3 TO 8 DECODER
+5
C4
0.1
+VCC
A0
A1
A2
CS2
CS3
CS1
Y
G
A1 A#2 B3 C4 C#5 D6 D#7 E8 F9 F#10 G11 G#12 A13 A#14 B15 C16
SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10 SW11 SW12 SW13 SW14 SW15 SW16
D1-32
MA165
+5
C1 0.1
C2 6V47
CN2
+5D 1
E 2
KF0 3
KS0 4
KF1 5
KS1 6
KF2 7
KS2 8
KF3 9
KS3 10
KDB3 11
KDB2 12
KDB1 13
KDB0 14
KDB4 15
E 16
MAIN
CN10
CN4
12 E
11 E
10 E
9 +5
8 KB0
7 KB1
6 KB2
5 KB3
4 KB4
3 Y0
2 Y1
1 Y2
MKB2
CN5
C#17 D18 D#19 E20 F21 F#22 G23 G#24 A25 A#26 B27 C28 C#29 D30 D#31 E32 F33 F#34 G35 G#36 A37 A#38 B39 C40 C#41 D42 D#43 E44
SW17 SW18 SW19 SW20 SW21 SW22 SW23 SW24 SW25 SW26 SW27 SW28 SW29 SW30 SW31 SW32 SW33 SW34 SW35 SW36 SW37 SW38 SW39 SW40 SW41 SW42 SW43 SW44
D33-88
MA165
CN3
8 KF0
7 KS0
6 KF1
5 KS1
4 KF2
3 KS2
2 KF3
1 KS3
MKB2
CN6

L MKB2 CIRCUIT


CN5
E 12
E 11
E 10
+5 9
KB0 8
KB1 7
KB2 6
KB3 5
KB4 4
Y0 3
Y1 2
Y2 1
MKB1 CN4
+5
C5 0.1
+5
16
+VCC
A0
A1
A2
CS2
CS3
CS1
Y
G
8
IC3
HD74LS138P
3 TO 8 DECODER
F45 F#46 G47 G#48 A49 A#50 B51 C52 C#53 D54 D#55 E56 F57 F#58 G59 G#60
SW45 SW46 SW47 SW48 SW49 SW50 SW51 SW52 SW53 SW54 SW55 SW56 SW57 SW58 SW59 SW60
D89–120
MA165
D89 D90 D91 D92 D93 D94 D95 D96 D97 D98 D99 D100 D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 D117 D118 D119 D120
CN6
KF0 8
KS0 7
KF1 6
KS1 5
KF2 4
KS2 3
KF3 2
KS3 1
MKB1 CN3
C6 0.1
+5
IC4
HD74LS138P
3 TO 8 DECODER
A61 A#62 B63 C64 C#65 D66 D#67 E68 F69 F#70 G71 G#72 A73 A#74 B75 C76 C#77 D78 D#79 E80 F81 F#82 G83 G#84 A85 A#86 B87 C88
SW61 SW62 SW63 SW64 SW65 SW66 SW67 SW68 SW69 SW70 SW71 SW72 SW73 SW74 SW75 SW76 SW77 SW78 SW79 SW80 SW81 SW82 SW83 SW84 SW85 SW86 SW87 SW88
D121–176
MA165
D121 D122 D123 D124 D125 D126 D127 D128 D129 D130 D131 D132 D133 D134 D135 D136 D137 D138 D139 D140 D141 D142 D143 D144 D145 D146 D147 D148 D149 D150 D151 D152 D153 D154 D155 D156 D157 D158 D159 D160 D161 D162 D163 D164 D165 D166 D167 D168 D169 D170 D171 D172 D173 D174 D175 D176

REPLACEMENT PARTS LIST......P.C.B. and Wiring Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice
   Components identified by △ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	RTL	Area	Part No.	Description	P/S
○	RTL		SXPG229541	MAIN	1
○	RTL		SXPG229621A	CPL	1
○	RTL		SXPG229721A	CPR	1
○	RTL		SXPG229611B	JACK2	1
○	RTL		SXPG229611C	INVL	1
○	RTL		SXPG229911	JACK	1
○	RTL		SXPG229841A	AS INCLUDE ASUB	1
○	RTL	EN EK EZ EW EF EA EP EH XL XR XP XW	SXPG230411	ACP	1
○	RTL	M MC XM	SXPG230421	ACP	1
○	RTL	X XS XT XD	SXPG230451	ACP	1
	RTL		SXPG218221	PKB	1
	RTL		SXPG226611A	MKB1	1
	RTL		SXPG226611B	MKB2	1
○			EDMMR63B0F	LCD	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	MN1382QTX	RESET IC	1
○	IC2	QVIGPR702AX1	8M BIT FLASH ROM W/PROGRAM DISK	1
	IC3	TC7W14F	INVERTER	1
○	IC4	QVIGPR702AX1	8M BIT FLASH ROM W/PROGRAM DISK	1
○	IC5	QSIGX3C08005	8M BIT MASK ROM	1
○	IC6	TMP94C241AF	MAIN CPU	1
○	IC7	QSIGX3C08004	8M BIT MASK ROM	1
○	IC8	BR93LC56RFE2	1K BIT PROGRAMMED EEP ROM	1
	IC9	TC74VHC08F	QUAD 2 INPUT AND GATE	1
	IC10	TC7S08F	IC,CMOS LOGIC	1
	IC11,13	M5M44265CJ6S	4M BIT DYNAMIC RAM	2
○	IC12	TC74HC138AF	3 TO 8 DECODER	1
○	IC14	QSIGX3C24004	24M BIT RHYTHM DATA ROM	1
	IC15	D72070GF3BE	8BIT MICROCONTROLLER	1
○	IC16	M66271FP	LCD CONTROLER	1
	IC17	BA10393F	COMPARATOR	1
	IC20	TC7S04F	INVERTER	1
○	IC21	TC74HC74AF	DUAL D FLIP-FLOP	1
	IC22	TC7S08F	IC,CMOS LOGIC	1
○	IC100	TC7SH08FU	2 INPUT AND GATE	1
	IC101	M5223FPE1	OPERATIONAL AMPLIFIER	1
	IC102	TC7W74F	INVERTER	1
○	IC103	TC203C220004	TONE GENERATOR LSI	1
○	IC104	QSIGU3C32537	32M BIT MASK ROM	1
○	IC105	QSIGU3C32536	32M BIT MASK ROM	1
○	IC106	QSIGU3C32539	32M BIT MASK ROM	1
○	IC107	QSIGU3C32538	32M BIT MASK ROM	1
	IC108	M5M44265CJ6S	4M BIT DYNAMIC RAM	1
○	IC109	TMS57070FFT	DIGITAL SIGNAL PROCESSOR	1
	IC110	TC7SH32FU	2 INPUT OR GATE	1
	IC111	M5M34051FP	BUS TRANSCEIVER	1
○	IC115	PCM1800E-T1	A/D CONVERTER	1
○	IC117	T74VHC161FTL	BINARY COUNTER	1
○	IC118	T74VHC164FTL	SHIFT REGISTER	1
	IC119	TC7SU04F	INVERTER	1
○	IC120	TC7SH08FU	2 INPUT AND GATE	1
○	IC121	TC7W74FU	INVERTER	1
○	IC122	TC7SH02FU	QUAD 2 INPUT NOR GATE	1
○	IC123	T74VHC164FTL	SHIFT REGISTER	1
	IC124	TC7SH32FU	2 INPUT OR GATE	1
	IC125	T7WU04F	TRIPLE INVERTER	1
	IC126	M5218AFP	OPERATIONAL AMPLIFIER	1
	IC127	PCM69AU	D/A CONVERTER	1
	IC129	M5218AFP	OPERATIONAL AMPLIFIER	1
	TRANSISTORS			
	Q1	2SD601AQ	TRANSISTOR	1
S	Q2	2SC1815GR	TRANSISTOR	1
	Q3	2SB709AR	TRANSISTOR	1
	Q4	2SD601AQ	TRANSISTOR	1
	Q5	2SB709AR	TRANSISTOR	1
	Q6~8	2SD601AQ	TRANSISTOR	3
	Q9 △	2SB946P	TRANSISTOR	1
S	Q10	2SC1815GR	TRANSISTOR	1
	Q100	2SD601AQ	TRANSISTOR	1
	Q101	2SD592ARS	TRANSISTOR	1
	DIODES			
	D1,2	MA110	DIODE	2
	D3	MA8030L	ZENER,2.9V	1
	D4	MA110	DIODE	1
	D5	MA151WK	DIODE	1
	D6,7	MA110	DIODE	2
	D8	MA8082M	ZENER,8.2V	1
	D9	MA110	DIODE	1
	D10	MA8051L	ZENER,5.1V	1
	D11,12	MA110	DIODE	2
	D13	MA1270	ZENER	1
	D14,15	SVDGERA1502	RECTIFIER	2
	D18	MA738	DIODE	1
○	D19	MA1240TR	ZENER	1
	D20 △	MA2062LF	ZENER,6.2V	1
	D100	MA8056	ZENER,5.6V	1
	D101	MA110	DIODE	1
	D102	MA151WK	DIODE	1
	D103,104	MA110	DIODE	2
	D105	MA151WK	DIODE	1
	D106,107	MA110	DIODE	2

	Ref. No.	Part No.	Description	P/S
	OSCILLATORS			
○	X1	QSXG1A1000A	10MHz,CRYSTAL OSCILLATOR	1
	X3	QSXG2F2400A	24MHz,CERAMIC OSCILLATOR	1
	X100	QSXG2F0100DA	1MHz,CERAMIC OSCILLATOR	1
	X101	QSXG1I3386A	33.8688MHZ,CRYSTAL OSCILLATOR	1
	X102	QSXG1A2500A	25MHz,QUARTZ OSCILLATOR	1
	COMPONENT COMBINATIONS			
	Z1,2	EXBV8V101J	100Ω×4	2
	Z3	EXBV8V472J	4.7KΩ×4	1
	Z4～7	EXBV8V101J	100Ω×4	4
	Z13,14	EXBS8V472J	4.7kΩ×4	2
	Z15～20	EXBV8V472J	4.7KΩ×4	6
	Z21	EXBV8V102J	1KΩ×4	1
	Z22～24	EXBS8V470J	47Ω×4	3
	Z25	EXBS8V471J	470Ω×4	1
	Z26	EXBS8V102J	1KΩ×4	1
	Z100,101	EXBS8V471J	470Ω×4	2
	Z102	EXBV8V471J	470Ω×4	1
	Z103,104	EXBV8V472J	4.7KΩ×4	2
	Z105～119	EXBV8V102J	1KΩ×4	15
	Z120	EXBV8V221J	220Ω×4	1
	COILS			
	L1	QLQGT1B100MA	10μH	1
	L2	QLQGT1T121SA	120μH	1
○	L3～11, 13～15	BK2125LM252T	COIL	12
○	R134, 146, 147, 149, 150	BK2125LM252T	COIL	5
	IC PROTECTOR			
	IP1 ⚠	ICP-N38T104	IC PROTECTOR	1
	WIRES			
	W1～3	QEXGRA01005A	WIRE	3
	RESISTORS			
	JP2,4,11,14,102, 103,105,107	ERJ6GEY0R00V	0Ω	8
	L3, 17	ERD25V0R00	0Ω	2
	R1,2	ERJ6GEYJ471V	470Ω	2
	R3～7	ERJ6GEYJ472V	4.7kΩ	5
	R8	ERJ6GEYJ102V	1kΩ	1
	R9	ERJ6GEYJ104V	100kΩ	1
	R10	ERJ6GEYJ103V	10kΩ	1
	R11	ERJ6GEYJ104V	100kΩ	1
	R13	ERJ6GEYJ472V	4.7kΩ	1
	R14	ERJ6GEYJ104V	100kΩ	1
	R15	ERJ6GEYJ101V	100Ω	1
	R16	ERJ6GEYJ472V	4.7kΩ	1
	R17	ERJ6GEYJ101V	100Ω	1
	R18	ERJ6GEYJ472V	4.7kΩ	1
	R19	ERJ6GEYJ102V	1kΩ	1
	R20	ERJ6GEYJ221V	220Ω	1
	R21	ERJ6GEYJ472V	4.7kΩ	1
	R22	ERJ6GEYJ104V	100kΩ	1
	R23	ERJ6GEYJ102V	1kΩ	1
	R24	ERJ6GEYJ222V	2.2kΩ	1
	R25	ERJ6GEYJ102V	1kΩ	1
	R26	ERJ6GEYJ472V	4.7kΩ	1
	R27	ERJ6GEY0R00V	0Ω	1
	R29,30	ERJ6GEYJ472V	4.7kΩ	2
	R31	ERJ6GEY0R00V	0Ω	1
	R32	ERJ6GEYJ104V	100kΩ	1
	R33～35	ERJ6GEYJ102V	1kΩ	3
	R36	ERJ6GEYJ472V	4.7kΩ	1
	R37	ERJ6GEYJ682V	6.8kΩ	1
	R38	ERJ6GEYJ101V	100Ω	1
	R39～41	ERJ6GEYJ103V	10kΩ	3
	R42	ERJ6GEYJ151V	150Ω	1
	R43	ERJ6GEYJ105V	1MΩ	1
	R44	ERJ6GEY0R00V	0Ω	1
	R45	ERJ6GEYJ101V	100Ω	1
	R46～49	ERJ6GEY0R00V	0Ω	4
	R50	ERJ6GEYJ471V	470Ω	1
	R51	ERJ6GEYJ101V	100Ω	1
	R52,53	ERJ6GEYJ472V	4.7kΩ	2
	R56	ERJ6GEY0R00V	0Ω	1
	R59	ERJ6GEYJ682V	6.8kΩ	1
	R60	ERJ6GEYJ102V	1kΩ	1
	R62	ERJ6GEYJ332V	3.3kΩ	1
	R63	ERJ6GEYJ101V	100Ω	1
	R64	ERJ6GEYJ470V	47Ω	1
	R65～67	ERJ6GEYJ222V	2.2kΩ	3
	R68	ERJ6GEYJ102V	1kΩ	1
	R69	ERJ6GEYJ222V	2.2kΩ	1
	R70	ERJ6GEYJ124V	120kΩ	1
	R71	ERJ6GEYJ103V	10kΩ	1
	R72	ERJ6GEYJ332V	3.3kΩ	1
	R73,74	ERJ6GEYJ152V	1.5kΩ	2
	R75	ERJ6GEYJ154V	150kΩ	1
	R77	ERJ6GEYJ102V	1kΩ	1
	R78	ERJ6GEYJ474V	470kΩ	1
	R79	ERJ6GEYJ334V	330kΩ	1
	R80	ERJ6GEYJ471V	470Ω	1
	R81	ERJ6GEYJ333V	33kΩ	1
	R82	ERJ6GEYJ472V	4.7kΩ	1
	R83	ERJ6GEYJ470V	47Ω	1
	R84	ERJ6GEYJ681V	680Ω	1
	R85	ERJ6GEYJ151V	150Ω	1
	R86	ERJ6GEYJ681V	680Ω	1
	R87	ERJ6GEYJ151V	150Ω	1
	R88	ERJ6GEYJ102V	1kΩ	1
	R89	ERJ6GEY0R00V	0Ω	1
	R90	ERJ6GEYJ101V	100Ω	1
	R91,92	ERJ6GEYJ102V	1kΩ	2
○	R93 ⚠	ERG2SJ222E	2.2kΩ,2W,FLAME-PROOF	1
○	R94 ⚠	ERG2SJ100E	10Ω,2W,FLAME-PROOF	1
○	R95 ⚠	ERG2SJ100E	10Ω,2W,FLAME-PROOF	1
	R96～100	ERJ6GEYJ471V	470Ω	5
	R101,102	ERJ6GEYJ102V	1kΩ	2
	R103	ERJ6GEYJ105V	1MΩ	1
	R104～108	ERJ6GEYJ472V	4.7kΩ	5
	R109,110	ERJ6GEYJ102V	1kΩ	2
	R111	ERJ6GEYJ105V	1MΩ	1
	R112	ERJ6GEYJ102V	1kΩ	1
	R113	ERJ6GEYJ472V	4.7kΩ	1
	R114,115	ERJ6GEYJ101V	100Ω	2
	R116～118	ERJ6GEYJ471V	470Ω	3
	R119	ERJ6GEYJ102V	1kΩ	1
	R120	ERJ6GEYJ563V	56kΩ	1
	R121	ERJ6GEYJ563V	56kΩ	1
	R122,123	ERJ6GEYJ332V	3.3kΩ	2
	R124～127	ERJ6GEYJ682V	6.8kΩ	4
	R128	ERJ6GEYJ105V	1MΩ	1
	R129	ERJ6GEY0R00V	0Ω	1
	R130	ERJ6GEYJ223V	22kΩ	1
	R131,132	ERJ6GEYJ682V	6.8kΩ	2
	R133	ERJ6GEYJ223V	22kΩ	1
	R135,137	ERJ6GEYJ472V	4.7kΩ	2
	R138	ERJ6GEYJ471V	470Ω	1

	Ref. No.	Part No.	Description	P/S
	R139	ERJ6GEYJ221V	220Ω	1
	R141	ERJ6GEYJ471V	470Ω	1
	R142~145	ERJ6GEYJ102V	1kΩ	4
	R151, 153, 154	ERJ6GEYJ471V	470Ω	3
	R155~157	ERD25V0R00	0Ω	3
	CAPACITORS			
	C1,2	ECUV1H101JG	100pF	2
	C3,4	ECUV1H104ZFX	0.1μF	2
	C5	ECUV1H103KBG	0.01μF	1
	C6	ECUV1H104ZFX	0.1μF	1
	C7	ECUV1H332KB	0.0033μF	1
	C8	ECUV1H104ZFX	0.1μF	1
	C9	ECUV1C224KBX	0.22μF	1
	C10~16	ECUV1H104ZFX	0.1μF	7
	C17	ECUV1H100DCN	10pF	1
	C18	ECEA1CKA100	10μF,16V	1
	C19	ECUV1H100DCN	10pF	1
	C20	ECUV1H104ZFX	0.1μF	1
	C21	ECUV1E473KB	0.047μF	1
	C22~30	ECUV1H104ZFX	0.1μF	9
	C31	ECUV1H101JG	100pF	1
	C32,35	ECUV1H104ZFX	0.1μF	2
	C36	ECUV1H223KBX	0.022μF	1
	C37	ECUV1H182JX	0.0018μF	1
	C38,39	ECUV1H104ZFX	0.1μF	2
	C40, 41	ECUV1H333KBX	0.033μF	2
	C42,45	ECUV1H104ZFX	0.1μF	2
	C46	EECS5R5V105	1F, 5.5V,MEMORY BACK-UP	1
	C47	ECA0JM221	220μF,6.3V	1
	C48	ECEA1CKA100	10μF,16V	1
	C49	ECUV1H104ZFX	0.1μF	1
○	C50	ECA1JM220B	22μF,63V	1
	C51	ECEA1HKA010	1μF,50V	1
	C52	ECEA1CKA100	10μF,16V	1
	C53	ECEA1HKA010	1μF,50V	1
	C54	ECEA1CKA100	10μF,16V	1
	C55	ECUV1H222KX	0.0022μF	1
	C56	ECUV1H101JG	100pF	1
	C57	ECUV1H682KBG	0.0068μF	1
	C58	ECQV1H104JM	0.1μF	1
○	C59	ECA2AM220B	22μF,100V	1
	C60	ECUV1H101JG	100pF	1
	C62	ECUV1E473KB	0.047μF	1
	C63	ECA0JM102	1000μF,6.3V	1
	C65~67	ECUV1H104ZFX	0.1μF	3
	C68	ECUV1H331JG	330pF	1
	C69	ECEA0JKA331	100μF, 6.3V	1
	C70~72	ECUV1H104ZFX	0.1μF	3
	C73	ECUV1H101JG	100pF	1
	C74	ECUV1H333KBX	0.033μF	1
○	C75	QCBG1H104ZFA	0.1μF	1
	C78	ECUV1H104ZFX	0.1μF	1
	C100~104	ECUV1H101JG	100pF	5
	C105,107	ECUV1H060DCN	6pF	2
	C108~112	ECUV1H104ZFX	0.1μF	5
	C113	ECEA0JKA470	47μF,6.3V	1
	C114~124	ECUV1H104ZFX	0.1μF	11
	C125	ECUV1H103KBG	0.01μF	1
	C126	ECUV1C224KBX	0.22μF	1
	C127	ECUV1H104ZFX	0.1μF	1
	C130,131	ECUV1H100DCN	10pF	2
	C132~136	ECUV1H104ZFX	0.1μF	5
	C137,138	ECUV1H471JG	470pF	2
	C139,140,142	ECUV1H104ZFX	0.1μF	3
	C144	ECRF1H104ZF	0.1μF	1
	C145	ECA1CM101	100μF,16V	1

	Ref. No.	Part No.	Description	P/S
	C146	ECUV1H104ZFX	0.1μF	1
	C147,148	ECEA1HKN010	1μF,50V	2
	C149	ECUV1H101JG	100pF	1
	C150	ECUV1H104ZFX	0.1μF	1
	C151	ECEA0JKA101	100μF,6.3V	1
	C152	ECEA1CKA100	10μF,16V	1
	C153~155	ECUV1H104ZFX	0.1μF	3
	C156	ECUV1H101JG	100pF	1
	C157	ECUV1H104ZFX	0.1μF	1
	C158,159	ECUV1H221JG	220pF	2
	C160,161	ECA1CM101	100μF,16V	2
	C162,163	ECUV1H681JG	680pF	2
	C164~166	ECEA1CKA100	10μF,16V	3
	C167	ECUV1H104ZFX	0.1μF	1

CPL CONTROL PANEL LEFT CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	M37471M2196S	8 BIT MICROCOMPUTER	1
	IC2,3	HD74LS07P	HEX BUFFERS	2
	TRANSISTORS			
	Q1~5	2SA830SB	TRANSISTOR	5
	DIODES			
	D1~61	MA165	DIODE	61
	D62~64,68,69,71~84,86,87,90,94~99	LN282R	LED (RED)	28
	D65~67,70,85,88,89 91~93,100,101	LN382G	LED (GREEN)	12
	OSCILLATOR			
	X1	EF0EC4004A3	4MHz,CERAMIC OSCILLATOR	1
	SWITCHES			
	S1~61	EVQ21507K	PUSH SWITCH	61
	S62	QSRGT002AA	ENCODER SWITCH	1
	VARIABLE RESISTORS			
	VR1	QRVG25N01B53	5KΩ B,APC/SEQUENCER VOLUME	1
	VR2	QRVG25P01B53	5KΩ B,MAIN VOLUME	1
	RESISTORS			
	R1,2	ERDS2T0	0Ω,1/4W	2
	R3	ERDS2TJ101	100Ω	1
	R4	ERDS2TJ471	470Ω	1
	R5,6	ERDS2TJ221	220Ω	2
	R7	ERDS2TJ471	470Ω	1
	R8~11	ERDS2TJ472	4.7kΩ	4
	R12,13	ERDS2TJ473	47kΩ	2
	R14	ERDS2TJ104	100kΩ	1
	R16~28	ERDS2TJ103	10kΩ	13
	R29~37	ERDS2TJ101	100Ω	9
	R38	ERDS2TJ333	33kΩ	1
	CAPACITORS			
	C1	ECEA0JKA221	220μF, 6.3V	1
	C2	ECBA1C222MR	0.0022μF	1

	Ref. No.	Part No.	Description	P/S
	C3	ECEA0JKS101	100µF,6.3V	1
	C4	ECEA0JKA331	330µF,6.3V	1
	C5,6	ECBA1H102KB	0.001µF	2
○	C7	QCBG1H104ZFA	0.1µF	1
○	C8~10	QCBG1H104ZFA	0.1µF	3

CPR CONTROL PANEL RIGHT CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	M37471M2196S	8 BIT MICROCOMPUTER	1
	IC2,3	HD74LS07P	HEX BUFFERS	2
	TRANSISTORS			
	Q1~5	2SA830SB	TRANSISTOR	5
	DIODES			
	D1~70	MA165	DIODE	70
	D71~81,83-87, 94~105,115~121	LN282R	LED (RED)	35
	D82,88,89,91,93, 106~114	LN382G	LED (GREEN)	14
	OSCILLATOR			
	X1	EF0EC4004A3	4MHz,CERAMIC OSCILLATOR	1
	SWITCHES			
	S1~5,7~70	EVQ21507K	PUSH SWITCH	69
	RESISTORS			
	R1,2	ERDS2T0	0Ω,1/4W	2
	R4	ERDS2TJ471	470Ω	1
	R5,6	ERDS2TJ221	220Ω	2
	R7	ERDS2TJ471	470Ω	1
	R8,9	ERDS2TJ103	10kΩ	2
	R10	ERDS2TJ333	33kΩ	1
	R16~28	ERDS2TJ103	10kΩ	13
	R29~40	ERDS2TJ101	100Ω	12
	CAPACITORS			
○	C1	QCBG1H104ZFA	0.1µF	1
	C2	ECBA1C222MR	0.0022µF	1
	C4	ECEA0JKA331	330µF,6.3V	1
○	C9	QCBG1H104ZFA	0.1µF	1
○	C10	QCBG1H104ZFA	0.1µF	1

JACK2 JACK2 CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUIT			
	IC1	M5218AL	OPERATIONAL AMPLIFIER	1
	TRANSISTOR			
S	Q1	2SC1815GR	TRANSISTOR	1

	Ref. No.	Part No.	Description	P/S
	DIODES			
	D1	MA165	DIODE	1
	D2	SEL4214RLC05	LED,POWER INDICATOR	1
	COILS			
	L1,2	QLQGT3T131TA	130µH×3	2
	JACKS			
○	JK1	QJJG010AA	HEADPHONE1	1
○	JK2	QJJG010AA	HEADPHONE2	1
○	JK3	QJJG011AA	MIC	1
	VARIABLE RESISTOR			
○	VR1	QRVG09A02B54	50K,MIC VOLUME	1
	RESISTORS			
	R1~4 ⚠	ERG1SJ470	47Ω,1W,FLAME-PROOF	4
	R5	ERDS2TJ104	100kΩ	1
	R6	ERDS2TJ472	4.7kΩ	1
	R7	ERDS2TJ222	2.2kΩ	1
	R8	ERDS2TJ104	100kΩ	1
	R9	ERDS2TJ223	22kΩ	1
	R10	ERDS2TJ683	68kΩ	1
	R11	ERDS2TJ222	2.2kΩ	1
	R12	ERDS2TJ152	1.5kΩ	1
	R13	ERDS2TJ222	2.2kΩ	1
	CAPACITORS			
○	C1	QCBG1H473ZFA	0.047µF	1
○	C2	QCBG1H473ZFA	0.047µF	1
○	C3	QCBG1H104ZFA	0.1µF	1
	C4	ECEA1HKN010	1µF,50V	1
○	C5	ECBT1H470J5	47pF	1
○	C6	QCBG1H104ZFA	0.1µF	1
	C7	ECEA1HKN010	1µF,50V	1
	C8	ECEA0JKA470	47µF,6.3V	1
	C9	ECBA1C682MR5	0.0068µF	1
○	C10	QCBG1H104ZFA	0.1µF	1
	C11	ECEA1HKN010	1µF,50V	1

INVL INVERTER L CIRCUIT

	Ref. No.	Part No.	Description	P/S
	TRANSISTORS			
	Q1,2	2SD592ARS	TRANSISTOR	2
	TRANSFORMER			
	T1 ⚠	QTDG003A	TRANSFORMER	1
	RESISTORS			
	R1,2	ERDS2TJ562	5.6kΩ	2
	CAPACITORS			
	C1	ECA0JM102	1000µF,6.3V	1
	C2	ECQB1H473JF	0.047µF	1
S	C3	ECCD3F180JGE	18pF	1

JACK JACK CIRCUIT

Ref. No.		Part No.	Description	P/S
INTEGRATED CIRCUIT				
	IC1	SVIGTLP513	PHOTO COUPLER	1
TRANSISTORS				
S	Q1,2	2SA1015-GR	2SA933STRS (SUB. PART)	2
DIODES				
	D1~5	MA165	DIODE	5
COILS				
	L5~9	QLQGT3T131TA	130μH×3	5
	L10	QLQGT1B100MA	10μH	4
	L14	QLQGT1B800MA	80μH	1
	L21	QLBG005A	COIL	1
JACKS				
	JK1	QJSG007AA	PEDAL IN	1
○	JK2	QJSG018AA	COMPUTER	1
	JK3	QJSG016AA	MIDI IN	1
	JK4	QJSG016AA	MIDI OUT	1
	JK5	QJSG016AA	MIDI THRU	1
	JK6	QJJG003AA	AUX IN L	1
	JK7	QJJG003AA	AUX IN R	1
	JK8	QJJG003AA	LINE OUT R	1
	JK9	QJJG003AA	LINE OUT L	1
SWITCH				
	S1	QSSGT011AA	SLIDE SWITCH	1
WIRES				
	W1~3	QEXGRA01005A	WIRE	3
RESISTORS				
	R1,2	ERDS2TJ680	68Ω	2
	R3	ERDS2TJ151	150Ω	1
	R4	ERDS2TJ330	33Ω	1
	R5	ERDS2TJ221	220Ω	1
	R6	ERDS2TJ331	330Ω	1
	R7,8	ERDS2TJ681	680Ω	2
	R10, 11, 13, 14	ERDS2TJ471	470Ω	4
	R15~17	ERDS2TJ102	1kΩ	3
CAPACITORS				
○	C1	QCBG1H104ZFA	0.1μF	1
	C2,3	ECCR1H221J	220pF	2
○	C4	QCBG1H104ZFA	0.1μF	1
○	C5	QCBG1H104ZFA	0.1μF	1
	C6,7,10,11	ECBA1C222MR	0.0022μF	4
○	C8	QCBG1H104ZFA	0.1μF	1
○	C9	QCBG1H104ZFA	0.1μF	1

AS AMP & POWER SUPPLY CIRCUIT

Ref. No.		Part No.	Description	P/S
INTEGRATED CIRCUITS				
	IC1~8	M5218AL	OPERATIONAL AMPLIFIER	8
	IC9	SVIGM5238L	OPERATIONAL AMPLIFIER	1
TRANSISTORS				
S	Q1	2SC1815GR	TRANSISTOR	1
	Q2	2SD2374A-P	TRANSISTOR	1
S	Q3	2SA1015-GR	2SA933STRS (SUB. PART)	1
	Q4	2SB1548A-P	TRANSISTOR	1
S	Q9	2SC1815GR	TRANSISTOR	1
S	Q10,11	2SA1015-GΩR	2SA933STRS (SUB. PART)	2
	Q12	2SD592ARS	TRANSISTOR	1
	Q13	2SB621ARS	TRANSISTOR	1
	Q14	2SD592ARS	TRANSISTOR	1
	Q15	2SB621ARS	TRANSISTOR	1
○	Q16 ⚠	FX30KMJ-3	FET	1
○	Q17 ⚠	FS30KMJ-3	FET	1
○	Q18 ⚠	FX30KMJ-3	FET	1
○	Q19 ⚠	FS30KMJ-3	FET	1
S	Q20~24	2SC1815GR	TRANSISTOR	5
S	Q25	2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q26~28	2SC1815GR	TRANSISTOR	3
S	Q29	2SA1015-GR	2SA933STRS (SUB. PART)	1
DIODES				
	D1,2	SVDGERA1502	RECTIFIER	2
S	D3,5,7,9 ⚠	SVDS3V20	RECTIFIER	4
	D11	SVDGERA1502	RECTIFIER	1
	D12,13	MA4160	ZENER,16.0V	2
	D14,15	MA4180	ZENER,18V	2
	D20	EK04	DIODE	1
	D21	MA165	DIODE	1
	D22	EK04	DIODE	1
	D23,24	MA165	DIODE	2
	D25,26	MA4220M	ZENER,22V	2
COILS				
	L1~4	QLBG005A	COIL	4
	L5	QLQGT3T131TA	130μH×3	1
	L6	QLQGT1B800MA	80μH	1
○	L7	QLQGT1D600MA	60μH	1
○	L8	QLQGT1D600MA	60μH	1
IC PROTECTORS				
	IP3,4 ⚠	ICP-N75T104	IC PROTECTOR	2
	IP5,6 ⚠	ICP-N10T104	IC PROTECTOR	2
	IP7, 8 ⚠	ICP-N75T104	IC PROTECTOR	2
WIRES				
	W1	QEXGRA01010J	WIRE	1
	W2	QEXGRA01005A	WIRE	1
VARIABLE RESISTOR				
○	VR1	QRNG0681C102	1kΩ	1
RESISTORS				
	R1,2	ERDS2TJ103	10kΩ	2
	R3,4	ERDS2TJ332	3.3kΩ	2
	R5,6	ERDS2TJ103	10kΩ	2
	R9	ERDS2TJ104	100kΩ	1
	R10	ERDS2TJ473	47kΩ	1

	Ref. No.		Part No.	Description	P/S
	R11		ERDS2TJ103	10kΩ	1
	R12		ERDS2TJ332	3.3kΩ	1
	R13		ERDS2TJ334	330kΩ	1
	R14		ERDS2TJ104	100kΩ	1
	R15		ERDS2TJ224	220kΩ	1
	R16		ERDS2TJ334	330kΩ	1
	R18		ERDS2TJ220	22Ω	1
	R19		ERDS2TJ222	2.2kΩ	1
	R20	⚠	ERD2FCVJ4R7	4.7Ω,1/4W,FUSE TYPE	1
	R21	⚠	ERD2FCVG220	22Ω, 1/4W,FUSE TYPE	1
	R22		ERDS2TJ224	220kΩ	1
	R23		ERDS2TJ334	330kΩ	1
	R24		ERDS2TJ220	22Ω	1
	R25		ERDS2TJ222	2.2kΩ	1
	R26	⚠	ERD2FCVJ4R7	4.7Ω,1/4W,FUSE TYPE	1
	R27	⚠	ERD2FCVG220	22Ω, 1/4W,FUSE TYPE	1
	R28,29	⚠	ERQ2CJP2R0S	2Ω,2W,FUSE TYPE	2
	R30		ERDS2TJ682	6.8kΩ	1
	R31		ERDS2TJ332	3.3kΩ	1
	R32		ERDS2TJ224	220kΩ	1
	R33		ERDS2TJ152	1.5kΩ	1
	R34		ERDS2TJ154	150kΩ	1
	R35		ERDS2TJ152	1.5kΩ	1
	R36		ERDS2TJ124	120kΩ	1
	R37		ERDS2TJ152	1.5kΩ	1
	R38		ERDS2TJ333	33kΩ	1
	R39		ERDS2TJ152	1.5kΩ	1
	R40		ERDS2TJ563	56kΩ	1
	R41		ERDS2TJ681	680Ω	1
	R42		ERDS2TJ154	150kΩ	1
	R43		ERDS2TJ682	6.8kΩ	1
	R44		ERDS2TJ332	3.3kΩ	1
	R45		ERDS2TJ224	220kΩ	1
	R46		ERDS2TJ182	1.8kΩ	1
	R47		ERDS2TJ154	150kΩ	1
	R48		ERDS2TJ152	1.5kΩ	1
	R49		ERDS2TJ124	120kΩ	1
	R50		ERDS2TJ152	1.5kΩ	1
	R51		ERDS2TJ154	150kΩ	1
	R52		ERDS2TJ152	1.5kΩ	1
	R53		ERDS2TJ563	56kΩ	1
	R54		ERDS2TJ681	680Ω	1
	R55		ERDS2TJ154	150kΩ	1
	R56		ERDS2TJ393	39kΩ	1
	R57		ERDS2TJ334	330kΩ	1
	R58		ERDS2TJ222	2.2kΩ	1
	R59		ERDS2TJ393	39kΩ	1
	R60		ERDS2TJ104	100kΩ	1
	R61		ERDS2TJ105	1MΩ	1
	R62		ERDS2TJ222	2.2kΩ	1
	R65		ERDS2TJ393	39kΩ	1
	R66		ERDS2TJ334	330kΩ	1
	R67		ERDS2TJ222	2.2kΩ	1
	R68		ERDS2TJ393	39kΩ	1
	R69		ERDS2TJ104	100kΩ	1
	R70		ERDS2TJ105	1MΩ	1
	R71		ERDS2TJ222	2.2kΩ	1
	R74,75	⚠	ERF5TJ100	10Ω,5W,FLAME-PROOF	2
○	R78	⚠	ERF2EXKR10V	0.1Ω,2W,FLAME-PROOF	1
○	R79	⚠	ERF2EXKR10V	0.1Ω,2W,FLAME-PROOF	1
	R80		ERDS2TJ223	22kΩ	1
	R81		ERDS2TJ153	15kΩ	1
	R82		ERDS2TJ333	33kΩ	1
	R83		ERDS2TJ223	22kΩ	1
	R84		ERDS2TJ153	15kΩ	1
	R85		ERDS2TJ333	33kΩ	1
	R86		ERDS2TJ103	10kΩ	1
	R87,89		ERDS2TJ104	100kΩ	2
	R90		ERDS2TJ103	10kΩ	1
	R91		ERDS2TJ472	4.7kΩ	1
	R92		ERDS2TJ103	10kΩ	1
	R93		ERDS2TJ472	4.7kΩ	1
	R94		ERDS2TJ473	47kΩ	1
	R95		ERDS2TJ332	3.3kΩ	1
	R96		ERDS2TJ103	10kΩ	1
	R97,98	⚠	ERQ2CJP6R8S	6.8Ω,2W,FUSE TYPE	2
	R99, 100		ERDS2TJ225	2.2MΩ	2
	R101, 102		ERDS2TJ682	6.8kΩ	2

CAPACITORS

	Ref. No.	Part No.	Description	P/S
	C1	ECQE1A104M6	0.1μF,125V	1
○	C2	EC0S1HP682DB	6800μF,50V	1
○	C3	EC0S1HP682DB	6800μF,50V	1
	C4,5	ECQV1H155JL	1.5μF	2
	C6	ECEA1HKA010	1μF,50V	1
	C7	ECEA1CKA100	10μF,16V	1
	C8	ECEA1HKA010	1μF,50V	1
	C9	ECA1CM101	100μF,16V	1
	C11	ECEA1CKA100	10μF,16V	1
	C13	ECA1CM101	100μF,16V	1
	C14,15	ECCR1H100D	10pF	2
○	C16	QCBG1H104ZFA	0.1μF	1
	C17	ECQG1H682KZ	0.0068μF	1
	C18	ECQG1H222KZ	0.0022μF	1
	C19	ECCR1H681J	680pF	1
	C20	ECQB1H103JF	0.01μF	1
	C21	ECQG1H152KZ	0.0015μF	1
	C22	ECQB1H333JF	0.033μF	1
	C23	ECQG1H332KZ	0.0033μF	1
	C24	ECQV1H154JM	0.15μF	1
	C25	ECQB1H333JF	0.033μF	1
	C26	ECQV1H474JM	0.47μF	1
	C27	ECQB1H473JF	0.047μF	1
	C28	ECEA1HKN2R2	2.2μF,50V	1
	C29	ECQV1H224JM	0.22μF	1
	C30	ECQG1H682KZ	0.0068μF	1
	C31	ECQG1H222KZ	0.0022μF	1
	C32	ECCR1H681J	680pF	1
	C33	ECQB1H103JF	0.01μF	1
	C34	ECQG1H152KZ	0.0015μF	1
	C35	ECQB1H333JF	0.033μF	1
	C36	ECQG1H332KZ	0.0033μF	1
	C37	ECQV1H154JM	0.15μF	1
	C38	ECQB1H333JF	0.033μF	1
	C39	ECQV1H474JM	0.47μF	1
	C40	ECQB1H473JF	0.047μF	1
	C41	ECEA1HKN2R2	2.2μF,50V	1
	C42	ECQV1H224JM	0.22μF	1
	C43	ECCR1H100D	10pF	1
	C44	ECCR1H221J	220pF	1
	C46	ECQG1H222KZ	0.0022μF	1
	C47	ECCR1H100D	10pF	1
	C48	ECCR1H221J	220pF	1
	C50	ECQG1H222KZ	0.0022μF	1
○	C51	ECA1HHG221B	220μF,50V	1
○	C52	ECA1HHG221B	220μF,50V	1
○	C53	ECQV1H225JL3	2.2μF	1
○	C57	ECQV1H225JL3	2.2μF	1
	C59,60	ECEA50Y1R5K	1.5μF,50V	2
	C61,62	ECEA50Y47	47μF,50V	2
○	C63	QCBG1H104ZFA	0.1μF	1
○	C64	QCBG1H104ZFA	0.1μF	1
	C65,66	ECEA1HKN010	1μF,50V	2
	C67	ECQG1H472KZ	0.0047μF	1

ASUB ASUB CIRCUIT

	Ref. No.	Part No.	Description	P/S
	TRANSISTORS			
S	Q101	2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q102	2SC1815GR	TRANSISTOR	1
S	Q103,104	2SA1015-GR	2SA933STRS (SUB. PART)	2
○	Q105	2SA970GTPE2	TRANSISTOR	1
○	Q106	2SC2240GTPE2	TRANSISTOR	1
S	Q107	2SC1815GR	TRANSISTOR	1
S	Q108,111	2SA1015-GR	2SA933STRS (SUB. PART)	2
○	Q109	2SA970GTPE2	TRANSISTOR	1
○	Q110	2SC2240GTPE2	TRANSISTOR	1
S	Q112	2SC1815GR	TRANSISTOR	1
S	Q113,114	2SA1015-GR	2SA933STRS (SUB. PART)	2
○	Q115	2SA970GTPE2	TRANSISTOR	1
○	Q116	2SC2240GTPE2	TRANSISTOR	1
S	Q117	2SC1815GR	TRANSISTOR	1
S	Q118	2SA1015-GR	2SA933STRS (SUB. PART)	1
○	Q119	2SA970GTPE2	TRANSISTOR	1
○	Q120	2SC2240GTPE2	TRANSISTOR	1
S	Q121	2SC1815GR	TRANSISTOR	1
S	Q122	2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q123	2SC1815GR	TRANSISTOR	1
S	Q124	2SA1015-GR	2SA933STRS (SUB. PART)	1
	DIODES			
	D101, 102, 107, 108	MA165	DIODE	4
	RESISTORS			
○	R101 ⚠	ERD2FCVG221T	220Ω,1/4W,FUSE TYPE	1
	R102,103	ERDS2TJ152	1.5kΩ	2
	R104	ERDS2TJ472	4.7kΩ	1
○	R105 ⚠	ERD2FCVG221T	220Ω,1/4W,FUSE TYPE	1
○	R106 ⚠	ERD2FCVG221T	220Ω,1/4W,FUSE TYPE	1
○	R107 ⚠	ERD2FCVG471T	470Ω,1/4W,FUSE TYPE	1
○	R108 ⚠	ERD2FCVG471T	470Ω,1/4W,FUSE TYPE	1
	R109,110	ERDS2TJ103	10kΩ	2
○	R113 ⚠	ERD2FCVG221T	220Ω,1/4W,FUSE TYPE	1
	R114,115	ERDS2TJ152	1.5kΩ	2
	R116	ERDS2TJ472	4.7kΩ	1
○	R117 ⚠	ERD2FCVG221T	220Ω,1/4W,FUSE TYPE	1
○	R118 ⚠	ERD2FCVG221T	220Ω,1/4W,FUSE TYPE	1
○	R119 ⚠	ERD2FCVG471T	470Ω,1/4W,FUSE TYPE	1
○	R120 ⚠	ERD2FCVG471T	470Ω,1/4W,FUSE TYPE	1
	R121,122	ERDS2TJ103	10kΩ	2
	CAPACITORS			
	C101	ECBA1H151KB	150pF	1
	C102	ECBA1H681KB5	680pF	1
	C103	ECBA1H681KB5	680pF	1
	C104	ECBA1H151KB	150pF	1
	C105	ECBA1H681KB5	680pF	1
	C106	ECBA1H681KB5	680pF	1

ACP AC POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	P/S
	COIL			
	L1 ⚠	TQLQGT2T100SA	10μH×2	1
	JACK			
	JK1 ⚠	SJVD0203B	AC INLET	1
	SWITCH			
	S1 ⚠	SSRG100A	VOLTAGE SELECTOR, X XS XD XT	1
	FUSES			
○	F1 ⚠	XBA1C40NB100	T4A,125V, M MC XM	1
○	F1 ⚠	XBA2C31TB0L	T3.15A,250V, X XS XD XT	1
○	F2 ⚠	XBA2C16TB0L	T1.6A,250V, X XS XD XT	1
○	F3 ⚠	XBA2C16TB0L	T1.6A,250V, EN EZ EW EF EA EH EP EK XL XR XP XW X XS XD XT	1
	CAPACITORS			
	C1 ⚠	ECKCVA1472MF	4700pF,LINE CAPACITOR	1
	C2 ⚠	ECQU2A104MN	0.1μF,250V,ACROSS-THE LINE CAPACITOR	1

PKB PEDAL KEYBOARD CIRCUIT

	Ref. No.	Part No.	Description	P/S
	SWITCHES			
	S1~3	QSTGT001AA	LEVER SWITCH	3
	RESISTORS			
	R8~10	ERDS2TJ472	4.7kΩ	3
	CAPACITOR			
	C1	ECRF1H104ZF	0.1μF	1

MKB1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	ST93C46CB1	1M BIT PROGRAMMED EEPROM	1
	IC2	HD74LS138P	3 TO 8 DECODER	1
	DIODES			
	D1~88	MA165	DIODE	88
	CAPACITORS			
	C1	ECRF1H104ZF	0.1μF	1
	C2	ECEA0JKA470	47μF,6.3V	1
	C3,4	ECRF1H104ZF	0.1μF	2

MKB2 MANUAL KEYBOARD 2 CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC3,4	HD74LS138P	3 TO 8 DECODER	2
	DIODES			
	D89~176	MA165	DIODE	88
	CAPACITORS			
	C5,6	ECRF1H104ZF	0.1μF	2

■WIRING PARTS

	Ref. No.	Part No.	Description	P/S
○	W1	QEXGVH06028B	CONNECTOR WITH WIRE	1
○	W2	QEXGVH04095C	CONNECTOR WITH WIRE	1
	W3	QEXGSS06055A	CONNECTOR WITH WIRE	1
○	W4	QEXGVH03140B	CONNECTOR WITH WIRE	1
	W5	QJLG013AA	PEDAL CORD	1
	W6	QEXGSS16100A	CONNECTOR WITH WIRE	1
	W7	QEXGSS04100A	CONNECTOR WITH WIRE	1
	W8	QEXGEL06020B	CONNECTOR WITH WIRE	1
	W9	QEXGEL06085D	CONNECTOR WITH WIRE	1
	W10	QEXGSS05045B	CONNECTOR WITH WIRE	1
	W11	QEXGSS04010A	CONNECTOR WITH WIRE	1
○	W12	QEXGSS12055A	CONNECTOR WITH WIRE	1
○	W13	QEXGZA05078B	CONNECTOR WITH WIRE	1
○	W14	QEXGSS05095B	CONNECTOR WITH WIRE	1
○	W15	QEXGZA34075B	CONNECTOR WITH WIRE	1
	W16	QEUGKCH06BB	FLAT CABLE	1
	W17	QEUGK8H07BB	FLAT CABLE	1
	W18	QEXGSS10025A	CONNECTOR WITH WIRE	1
○	W19	QEXGSS07025A	CONNECTOR WITH WIRE	1
	W20	QEXGSS05025A	CONNECTOR WITH WIRE	1

REPLACEMENT PARTS LIST......Cabinet and Chassis Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. ○ mark are new parts.
   Cabinet Colour
   - SX-PR702......Black
   - SX-PR702M......Walnut
3. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
4. For part No. with area mark, check the area when placing an order.
5. The raw material indication for synthetic resin
   In order to facilitate classification of parts of synthetic resin manufacture and to promote the recycling of natural resources, a raw material symbol for such parts is indicated in the Ref. No./Material column.

SX-PR702 CABINET & CHASSIS PARTS

Ref. No.	Part No.	Description	P/S
		SPEAKERS	
○ SP1,2	EAS16PL471B3	16cm,6Ω	2
SP3,4	EAS15S09A	SPEAKER,13×6cm 8Ω	2
SP5,6	EAS65PH31A3	6.5cm,8Ω	2
		POWER TRANSFORMERS	
○ T1 ⚠	QTPG1M053A	POWER TRANSFORMER, EN EK EZ EW EF EA EP EH X XL XR XS XT XD XP XW	1
○ T1 ⚠	QTPG1M054A	POWER TRANSFORMER, M MC XM	1
		POWER CORDS & PLUG	
PC1 ⚠	QJAG025AA	POWER CORD, M MC XM	1
○ PC1 ⚠	QJAG029AA	POWER CORD, XL XR	1
○ PC1 ⚠	QJAG028AA	POWER CORD, EK XD	1
○ PC1 ⚠	QJAG027AA	POWER CORD, EN EZ EW EF EA EP EH X XS XT XP XW	1
PC2 ⚠	SJP5213-1	ATTACHMENT PLUG, X XT XP	1
		CABINET PARTS	
1	QMFG1083AB	FELT	1
2	SBLG7-2	STAY	1
○ 3	QKQGN878AA	MUSIC STAND	1
4	SBHG5003-2	HINGE	2
○ 5	QKQGA131AA	TOPCOVER ASS'Y	1
○ 5-1	QMFG1221AA	FELT	2
○ 5-2	QMFG1222AA	FELT	1
5-3	SGBG160B	BADGE	1
○ 6	QKQGF034AA	KEYBOARD COVER ASS'Y	1
6-1	QGKG0095AD	ORNAMENT	1
○ 6-2	QMFG1258AA	FELT	2
6-3	QMRG7031DC	PROTECTOR	1
6-4	QMRG7032DC	PROTECTOR	1
○ 6-5	QMFG1259AA	FELT	2
○ 6-6	QMFG1260AA	FELT	2
○ 6-7	QMFG1262AA	FELT	1
○ 6-8	QMFG1261AA	FELT	1
6-9	QXQG007AA	AXLETREE	1
6-10	QMRG7056AA	HOLDER	2
6-11	QWBG002AA	HOLDER	1
○ 7	QKUG1047AAK	SPEAKER BOX REAR BOARD	1

SX-PR702M CABINET & CHASSIS PARTS

Ref. No.	Part No.	Description	P/S
		SPEAKERS	
○ SP1,2	EAS16PL471B3	16cm,6Ω	2
SP3,4	EAS15S09A	SPEAKER,13×6cm 8Ω	2
SP5,6	EAS65PH31A3	6.5cm,8Ω	2
		POWER TRANSFORMERS	
○ T1 ⚠	QTPG1M053A	POWER TRANSFORMER, EZ EK EW EF EA EP XL XR	1
○ T1 ⚠	QTPG1M054A	POWER TRANSFORMER, M MC XM	1
		POWER CORDS & PLUG	
PC1 ⚠	QJAG025AA	POWER CORD, M MC XM	1
○ PC1 ⚠	QJAG029AA	POWER CORD, XL XR	1
○ PC1 ⚠	QJAG028AA	POWER CORD, EK	1
○ PC1 ⚠	QJAG027AA	POWER CORD, EZ EW EF EA EP	1
		CABINET PARTS	
1	QMFG1083AB	FELT	1
2	SBLG7-2	STAY	1
○ 3	QKQGN878AB	MUSIC STAND	1
4	SBHG5003-2	HINGE	2
○ 5	QKQGA131AB	TOPCOVER ASS'Y	1
○ 5-1	QMFG1221AA	FELT	2
○ 5-2	QMFG1222AA	FELT	1
5-3	SGBG160B	BADGE	1
○ 6	QKQGF034AB	KEYBOARD COVER ASS'Y	1
6-1	QGKG0095AC	ORNAMENT	1
○ 6-2	QMFG1258AA	FELT	2
6-3	QMRG7031DC	PROTECTOR	1
6-4	QMRG7032DC	PROTECTOR	1
○ 6-5	QMFG1259AA	FELT	2
○ 6-6	QMFG1260AA	FELT	2
○ 6-7	QMFG1262AA	FELT	1
○ 6-8	QMFG1261AA	FELT	1
6-9	QXQG007AA	AXLETREE	1
6-10	QMRG7056AA	HOLDER	2
6-11	QWBG002AA	HOLDER	1
○ 7	QKUG1047AB	SPEAKER BOX REAR BOARD, EZ	1
○ 7	QKUG1047AC	SPEAKER BOX REAR BOARD, M MC EK EW EF EA EP XL XR XM	1

SX-PR702

Ref. No.	Part No.	Description	P/S
○ 8	QYKG234AAK	SPEAKER BOX	1
○ 9	QKQGN882AA	CROSS BOARD	1
10	SHRG9620A	CORD CLAMPER	3
○ 11	QKQGB481AA	LEFT PLANK ASS'Y	1
11-1 PP	⎧SHRG2130B-K	FOOT	3
○ 11-2	⎩QMGG056AA	SPACER	1
○ 12	QKQGB482AA	RIGHT PLANK ASS'Y	1
12-1 PP	⎧SHRG2130B-K	FOOT	3
○ 12-2	⎩QMGG056AA	SPACER	1
○ 13	QKQGM091AA	PEDAL BOX ASS'Y	1
13-1 ABS	[QGKG0113AA	ORNAMENT	3
14	SHRG1230A	CORD CLAMPER	1
15	QMBG009AA	SPRING	3
16	QMFG1133AA	FELT	3
17	QMFG1134AA	FELT	3
18	QMWG4002AA	PEDAL ARM	3
19	QMFG1135AA	FELT	3
20	QKAG0011AA	FOOT	1
○ 30	QMFG4222AA	CUSHION	2
31	SBNG7050A	KNOB	2
32 ABS	QGUG3002BB	DIAL WHEEL	1
○ 33	QKWG033AB	LCD PANEL	1
○ 34 PS	QGPG0133BB	CONTROL PANEL	1
35	QMFG1140AA	FELT	1
○ 36	QGUG1202BB	BUTTON	1
○ 37	QGUG1205BB	BUTTON	1
○ 38	QGUG1201CB	BUTTON	1
○ 39	QGUG1204CB	BUTTON	1
○ 40	QGUG1207BB	BUTTON	1
○ 41	QGUG1463AA	BUTTON	1
○ 42	QGUG1202CB	BUTTON	1
○ 43	QMFG4215AA	CUSHION	1
○ 44	QGUG1440AB1K	BUTTON	1
○ 45	QGUG1462AA	BUTTON	1
○ 46	QGUG1461AA	BUTTON	1
○ 47	QGUG1468AA	BUTTON	1
○ 48	QGUG1465AA	BUTTON	1
○ 49	QMFG4214AA	CUSHION	2
○ 50	QGUG1471AA	BUTTON	2
○ 51	QGUG1466AA	BUTTON	1
○ 52	QGUG1459AA	BUTTON	1
○ 53	QGUG1201BB	BUTTON	1
○ 54	QGUG1460AA	BUTTON	1
○ 55	QGUG1467AA	BUTTON	1
○ 56	QGUG1204BB	BUTTON	1
○ 57	QGUG1216AB	BUTTON	1
○ 58	QGUG1203BB	BUTTON	1
○ 59	QGUG1203BB	BUTTON	1
○ 60	QGUG1206BB	BUTTON	2
○ 61	QGUG1203CB	BUTTON	2
○ 62	QGUG1464AA	BUTTON	1
○ 63	QGUG1212AB	BUTTON	1
○ 64	QGUG1203BB	BUTTON	1
○ 65	QGUG1203DB	BUTTON	1
○ 66	QGKG0096AD	AC JACK PANEL, EN M EK EZ EW EF EA EP EH XL XR XP XM XW MC	1
○ 66	QGKG0096BC	AC JACK PANEL, X XS XT XD	1
67 ⚠	SJS9231A	AC INLET COVER, EN EK EZ EW EF EA EP EH X XL XR XS XT XD XP XW	1
67 ⚠	SJS9334A	AC INLET COVER, M MC XM	1
68	QMRG7029AC	BRACKET	1
69	QMRG7028AC	BRACKET	1
○ 70	QGKG0076FB	EXTERNAL JACK PANEL	1
71	SBNG4010A	VOLUME KNOB	1

SX-PR702M

Ref. No.	Part No.	Description	P/S
○ 8	QYKG234ABK	SPEAKER BOX	1
○ 9	QKQGN882AB	CROSS BOARD	1
10	SHRG9620A	CORD CLAMPER	3
○ 11	QKQGB481AB	LEFT PLANK ASS'Y	1
11-1 PP	⎧SHRG2130B-K	FOOT	3
○ 11-2	⎩QMGG056AA	SPACER	1
○ 12	QKQGB482AB	RIGHT PLANK ASS'Y	1
12-1 PP	⎧SHRG2130B-K	FOOT	3
○ 12-2	⎩QMGG056AA	SPACER	1
○ 13	QKQGM091AB	PEDAL BOX ASS'Y, EZ	1
13-1 ABS	[QGKG0113AA	ORNAMENT	3
○ 13	QKQGM091AC	PEDAL BOX ASS'Y, M MC EK EW EF EA EP XL XR XM	1
13-1 ABS	[QGKG0113AA	ORNAMENT	3
14	SHRG1230A	CORD CLAMPER	1
15	QMBG009AA	SPRING	3
16	QMFG1133AA	FELT	3
17	QMFG1134AA	FELT	3
18	QMWG4002AA	PEDAL ARM	3
19	QMFG1135AA	FELT	3
20	QKAG0011AA	FOOT	1
○ 30	QMFG4222AA	CUSHION	2
31	SBNG7050A	KNOB	2
32 ABS	QGUG3002BB	DIAL WHEEL	1
○ 33	QKWG033AB	LCD PANEL	1
○ 34 PS	QGPG0133BB	CONTROL PANEL	1
35	QMFG1140AA	FELT	1
○ 36	QGUG1202BB	BUTTON	1
○ 37	QGUG1205BB	BUTTON	1
○ 38	QGUG1201CB	BUTTON	1
○ 39	QGUG1204CB	BUTTON	1
○ 40	QGUG1207BB	BUTTON	1
○ 41	QGUG1463AA	BUTTON	1
○ 42	QGUG1202CB	BUTTON	1
○ 43	QMFG4215AA	CUSHION	1
○ 44	QGUG1440AB1K	BUTTON	1
○ 45	QGUG1462AA	BUTTON	1
○ 46	QGUG1461AA	BUTTON	1
○ 47	QGUG1468AA	BUTTON	1
○ 48	QGUG1465AA	BUTTON	1
○ 49	QMFG4214AA	CUSHION	2
○ 50	QGUG1471AA	BUTTON	2
○ 51	QGUG1466AA	BUTTON	1
○ 52	QGUG1459AA	BUTTON	1
○ 53	QGUG1201BB	BUTTON	1
○ 54	QGUG1460AA	BUTTON	1
○ 55	QGUG1467AA	BUTTON	1
○ 56	QGUG1204BB	BUTTON	1
○ 57	QGUG1216AB	BUTTON	1
○ 58	QGUG1203BB	BUTTON	1
○ 59	QGUG1203BB	BUTTON	1
○ 60	QGUG1206BB	BUTTON	2
○ 61	QGUG1203CB	BUTTON	2
○ 62	QGUG1464AA	BUTTON	1
○ 63	QGUG1212AB	BUTTON	1
○ 64	QGUG1203BB	BUTTON	1
○ 65	QGUG1203DB	BUTTON	1
○ 66	QGKG0096AD	AC JACK PANEL	1
67 ⚠	SJS9231A	AC INLET COVER, EZ EK EW EF EA EP XL XR	1
67 ⚠	SJS9334A	AC INLET COVER, M MC XM	1
68	QMRG7029AC	BRACKET	1
69	QMRG7028AC	BRACKET	1
○ 70	QGKG0076FB	EXTERNAL JACK PANEL	1
71	SBNG4010A	VOLUME KNOB	1

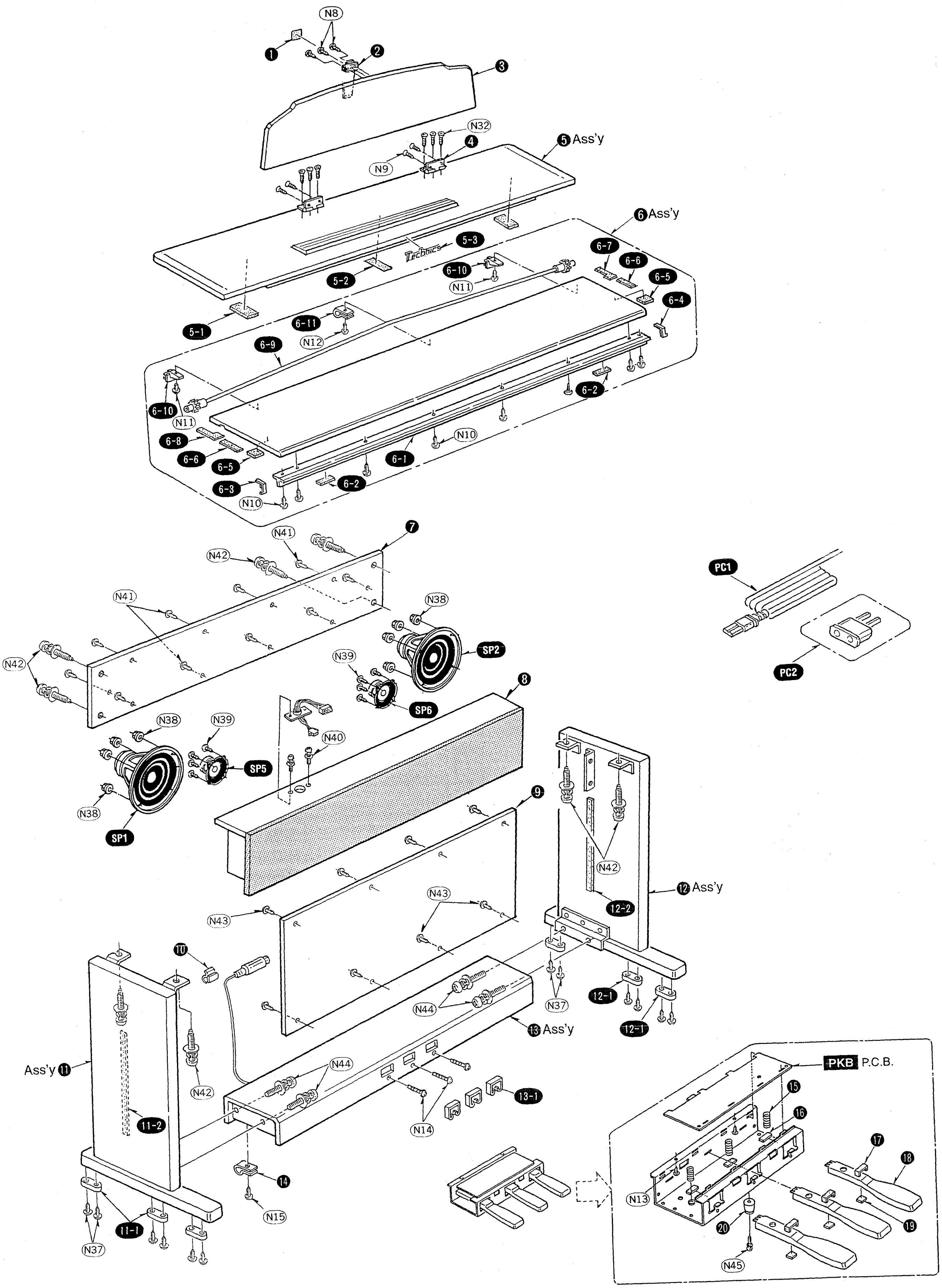
SX-PR702

Ref. No.			Part No.	Description	P/S
	72		QKAG0012AA	FOOT	2
	73		QMRG7086AA	LID,GUIDE	2
○	74		QMBG023AA	SPRING	1
○	75	PS	QKSGG028AA	GUIDE	1
○	76	PS	QKSGG029AA	GUIDE	1
	77		QAUG019AA	DISK DRIVE UNIT	1
	78		QMFG1220AA	FELT	1
	79		QEXGRA01007H	WIRE	1
	80		QMGG029AA	FLOATING RUBBER	4
○	90		QYKG231AA	CABINET ASS'Y	1
	91		QMFG4103AA	CUSHION	1
	92		QLZG017A	CORE	8
○	93		QQLG174AA	HEADPHONE LABEL	1
○	94		QMGG054AA	SPACER	2
○	95	⚠	QMRG1027AA	FUSE COVER, EN EK EZ EW EF EA EP EH XL XR XP XW M MC XM	1
○	95	⚠	QMRG1027AA	FUSE COVER, X XS XD XT	3
○	96		QEXGRA01007K	WIRE	1
SCREWS & WASHERS					
	N1		XTW3+10Q	SCREW	2
	N2		XTWSG2	SCREW WITH WASHER	2
	N3		XNS12FZ	NUT	3
	N4		XNS9	NUT	1
	N5		QHDG043AA	SCREW WITH WASHER	4
	N6		XYN3+F6	SCREW WITH WASHER	1
	N7		XTW3+8J	SCREW	1
	N8		XTB3+10AFZ	SCREW	3
	N9		XTS3+10AFZ	SCREW	4
	N10		XTT4+10A	SCREW	8
	N11		XTB4+10B	SCREW	2
	N12		XTT4+12AFZ	SCREW	1
	N13		XTT4+16A	SCREW	2
	N14		XYN4+F16FZ	SCREW WITH WASHER	3
	N15		XTB35+14A	SCREW	1
	N16		XTWSG2	SCREW WITH WASHER	6
	N17		XTW3+10Q	SCREW	42
	N18		XYN4+F16	SCREW WITH WASHER	4
	N19		XYN4+F25	SCREW WITH WASHER	6
	N20		XTB35+10A	SCREW	18
	N21		SNEG2660A	SCREW	9
	N22		QHDG021AA	SCREW WITH WASHER	10
	N23		XTW3+8J	SCREW	8
	N24		XTB4+10C	SCREW	4
	N25		QHWG007AA	NUT	2
	N26		SNEG2400A	SCREW WITH WASHER	2
	N27		XSN5+85	SCREW	4
	N28		XWA5B	WASHER	4
	N29		SNEG150A	WASHER	4
	N30		XTB35+10A	SCREW	4
○	N31		GTT4+35AFZ	SCREW	4
	N32		XTS3+12AFZ	SCREW	6
	N33		XTB35+16A	SCREW	14
	N34		XTN4+50AFZ	SCREW	4
	N35		XWG4G16	WASHER	1
	N36		XTB35+20A	SCREW	2
	N37		XTW3+16J	SCREW	12
	N38		SNE499-1	NUT	8
	N39		XTT4+12A	SCREW	8
	N40		QHDG004AA	SCREW	2
	N41		XTT4+25AFZ	SCREW	10
	N42		QHDG016AB	SCREW WITH WASHER	8
	N43		XTT5+20AFZ	SCREW	8
	N44		QHDG032AB	SCREW WITH WASHER	4
	N45		XTN4+16F	SCREW WITH WASHER	1

SX-PR702M

Ref. No.			Part No.	Description	P/S
	72		QKAG0012AA	FOOT	2
	73		QMRG7086AA	LID,GUIDE	2
○	74		QMBG023AA	SPRING	1
○	75	PS	QKSGG028AA	GUIDE	1
○	76	PS	QKSGG029AA	GUIDE	1
	77		QAUG019AA	DISK DRIVE UNIT	1
	78		QMFG1220AA	FELT	1
	79		QEXGRA01007H	WIRE	1
	80		QMGG029AA	FLOATING RUBBER	4
○	90		QYKG231AB	CABINET ASS'Y	1
	91		QMFG4103AA	CUSHION	1
	92		QLZG017A	CORE	8
○	93		QQLG174AA	HEADPHONE LABEL	1
○	94		QMGG054AA	SPACER	2
○	95	⚠	QMRG1027AA	FUSE COVER	1
○	96		QEXGRA01007K	WIRE	1
SCREWS & WASHERS					
	N1		XTW3+10Q	SCREW	2
	N2		XTWSG2	SCREW WITH WASHER	2
	N3		XNS12FZ	NUT	3
	N4		XNS9	NUT	1
	N5		QHDG043AA	SCREW WITH WASHER	4
	N6		XYN3+F6	SCREW WITH WASHER	1
	N7		XTW3+8J	SCREW	1
	N8		XTB3+10AFZ	SCREW	3
	N9		XTS3+10AFZ	SCREW	4
	N10		XTT4+10A	SCREW	8
	N11		XTB4+10B	SCREW	2
	N12		XTT4+12AFZ	SCREW	1
	N13		XTT4+16A	SCREW	2
	N14		XYN4+F16FZ	SCREW WITH WASHER	3
	N15		XTB35+14A	SCREW	1
	N16		XTWSG2	SCREW WITH WASHER	6
	N17		XTW3+10Q	SCREW	42
	N18		XYN4+F16	SCREW WITH WASHER	4
	N19		XYN4+F25	SCREW WITH WASHER	6
	N20		XTB35+10A	SCREW	18
	N21		SNEG2660A	SCREW	9
	N22		QHDG021AA	SCREW WITH WASHER	10
	N23		XTW3+8J	SCREW	8
	N24		XTB4+10C	SCREW	4
	N25		QHWG007AA	NUT	2
	N26		SNEG2400A	SCREW WITH WASHER	2
	N27		XSN5+85	SCREW	4
	N28		XWA5B	WASHER	4
	N29		SNEG150A	WASHER	4
	N30		XTB35+10A	SCREW	4
○	N31		GTT4+35AFZ	SCREW	4
	N32		XTS3+12AFZ	SCREW	6
	N33		XTB35+16A	SCREW	14
	N34		XTN4+50AFZ	SCREW	4
	N35		XWG4G16	WASHER	1
	N36		XTB35+20A	SCREW	2
	N37		XTW3+16J	SCREW	12
	N38		SNE499-1	NUT	8
	N39		XTT4+12A	SCREW	8
	N40		QHDG004AA	SCREW	2
	N41		XTT4+25AFZ	SCREW	10
	N42		QHDG016AB	SCREW WITH WASHER	8
	N43		XTT5+20AFZ	SCREW	8
	N44		QHDG032AB	SCREW WITH WASHER	4
	N45		XTN4+16F	SCREW WITH WASHER	1

■CABINET PARTS LOCATION


N8
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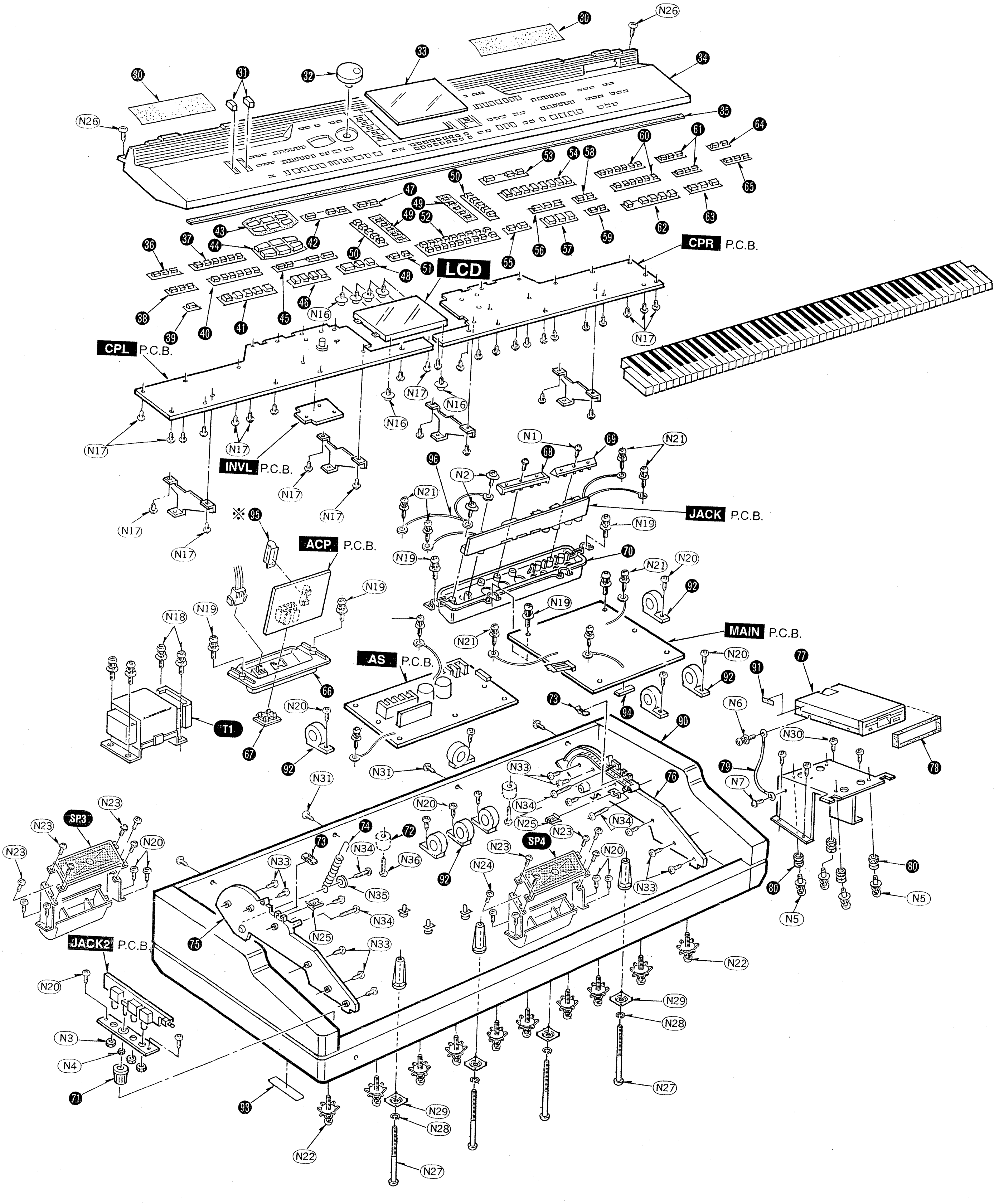 N26
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LCD
CPR P.C.B.
CPL P.C.B.
N16
N17
INVL P.C.B.
N1
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N21
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JACK P.C.B.
N19
※ 95
ACP P.C.B.
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N20
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N18
MAIN P.C.B.
AS P.C.B.
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T1
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N6
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N35
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SP3
SP4
N23
N24
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JACK2 P.C.B.
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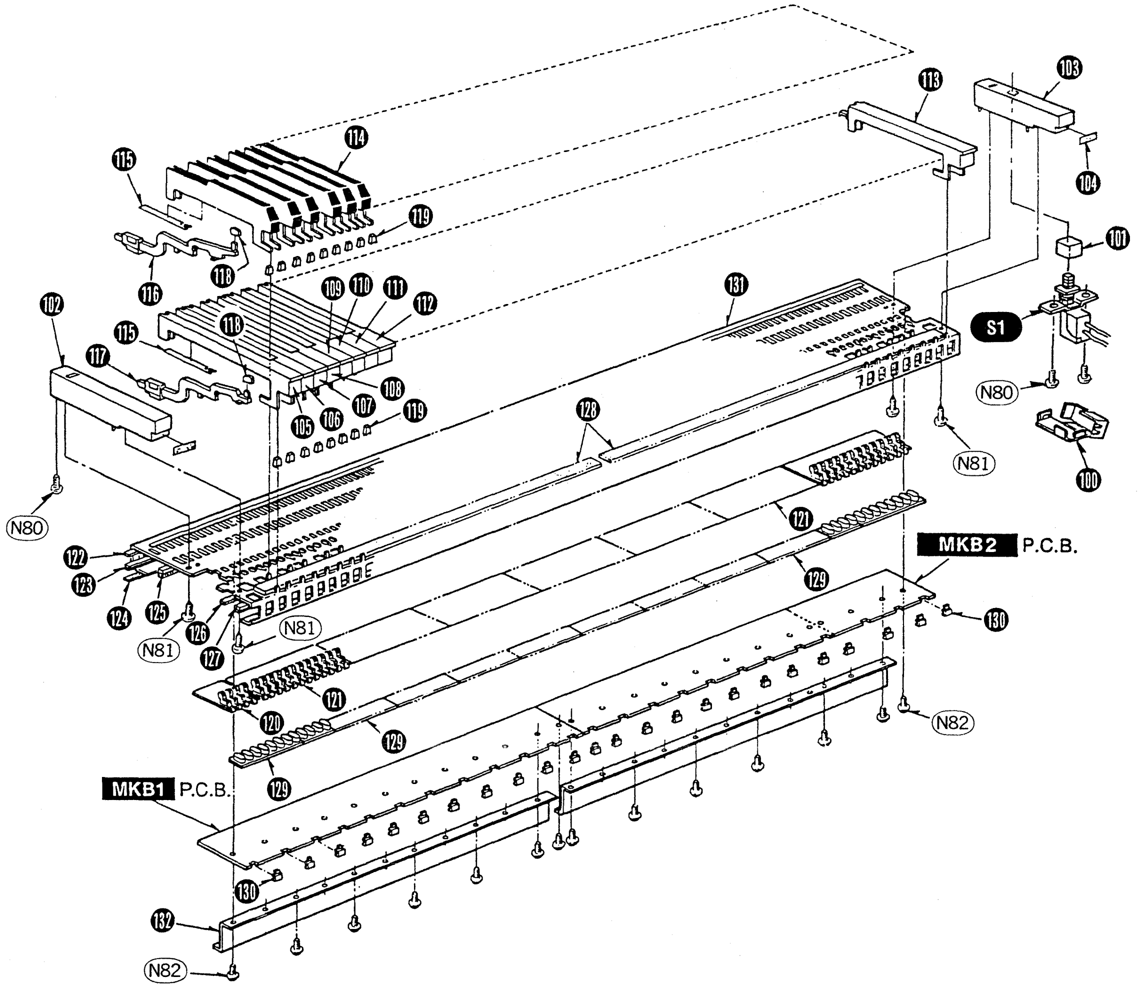
■MANUAL KEYBOARD PARTS LOCATION



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MKB2 P.C.B.
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MKB1 P.C.B.
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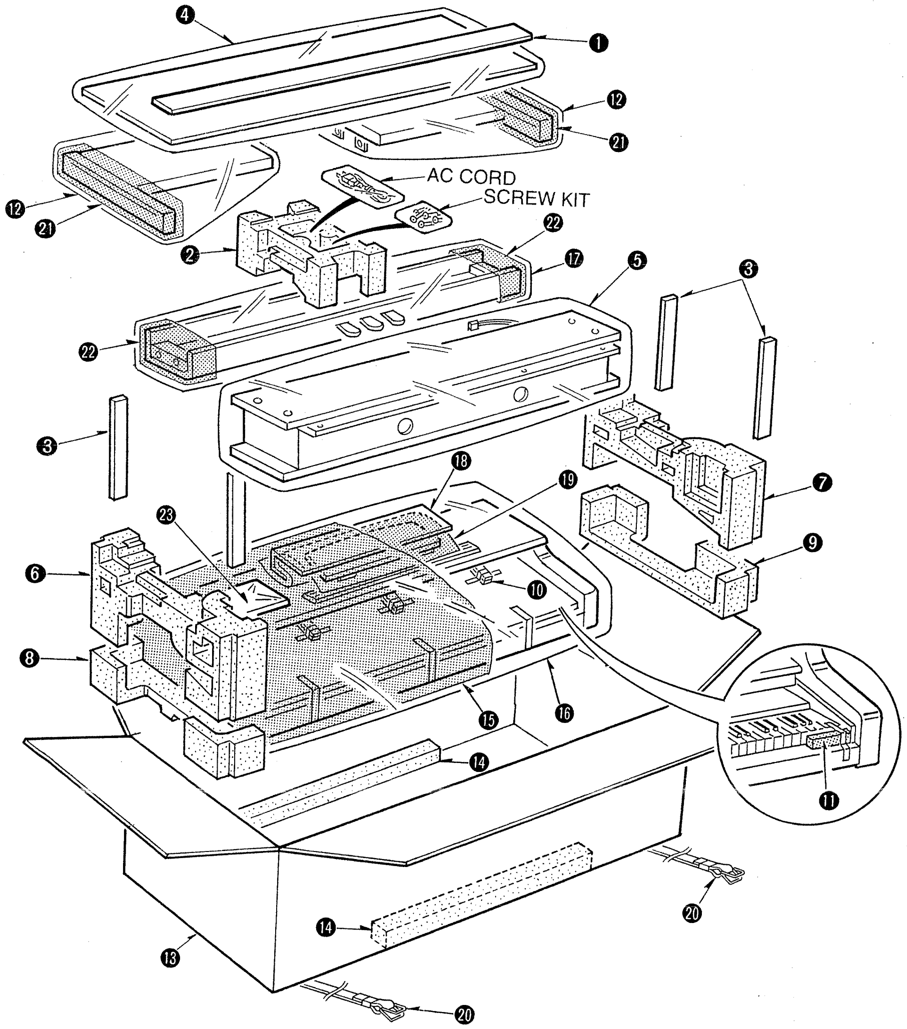
■MANUAL KEYBOARD PARTS

Ref. No.	Part No.	Description	P/S
SWITCH			
S1 ⚠	ESB8273V	POWER SWITCH	1
MANUAL KEYBOARD PARTS			
100 ⚠ PP	SHRG8390A	COVER,POWER SW	1
101 ABS	QGUG1040AA	BUTTON,POWER SWITCH	1
102 PS	QGPG0042AB	END COVER PANEL,RIGHT	1
103 PS	QGPG0041BB	END COVER PANEL,LEFT	1
104	QMFG1104AA	FELT	2
105 AS	QMWG1001AB	WHITE KEY (FIRST OCTAVE A KEY)	1
106 AS	QMWG1002AB	WHITE KEY (B KEY)	8
107 AS	QMWG1003AB	WHITE KEY (C KEY)	7
108 AS	QMWG1004AB	WHITE KEY (D KEY)	7
109 AS	QMWG1005AB	WHITE KEY (E KEY)	7
110 AS	QMWG1006AB	WHITE KEY (F KEY)	7
111 AS	QMWG1007AB	WHITE KEY (G KEY)	7
112 AS	QMWG1008AB	WHITE KEY (A KEY)	7
113 AS	QMWG1009AB	WHITE KEY (TOP OCTAVE C KEY)	1
114 AS	QMWG2001AC	BLACK KEY	36
115	SUSG534A	SPRING	88
116	QMWG8019CA	HAMMER (BLACK KEY)	36
117	QMWG8017DA	HAMMER (WHITE KEY)	52
118	SHGG9121A	RUBBER CAP (HAMMER)	88
119 PA	QMWG8037AA	KEY GUIDE	88
120 ABS	QMWG8022AA	FULCURUM (4PCS.ON ONE)	1
121 ABS	QMWG8021AA	FULCURUM (12PCS.ON ONE)	7
122	SHRGA9080A	SPONGE	2
123	QMFG1073AA	FELT	2
124	QMFG1230AA	FELT	2
125	QMFG1101AA	FELT	2
126	QMFG1061AB	FELT	2
127	QMFG1231AC	FELT	2
128	QMFG1086AB	FELT	2
129	QMWG6006AA	RUBBER SWITCH (8PCS. ON ONE)	11
130	SHRG9751A	P.C.B.HOLDER	24
131	QMWG3003CA	CHASSIS	1
132	SUWG3154A	ANGLE	2
SCREWS			
N80	XTV3+10C	SCREW	2
N81	XTB4+12A	SCREW	4
N82	XTW3+10T	SCREW	14

■PACKING



■PACKING PARTS

	Ref. No.		Part No.	Description	P/S
	PACKING PARTS				
	1		QPNG0358AA	TOP CARDBOARD	1
○	2		QPNG0697AA	PAD	1
○	3		QPQG061AB	PROP	4
	4	PE	QPFG013AA	POLYETHYLENE BAG	1
	5	PE	QPFG012AA	POLYETHYLENE BAG	1
○	6	PS	QPNG0693AA	PAD	1
○	7	PS	QPNG0694AA	PAD	1
○	8	PS	QPNG0695AA	PAD	1
○	9	PS	QPNG0696AA	PAD	1
	10		SPNG5161A	SPACER	3
	11	PE	QPNG0556AA	SPACER	2
	12	PE	QPFG006AA	POLYETHYLENE BAG	2
○	13		QPGG0419AA	PACKING CASE,PAPER,SX-PR702	1
○	13		QPGG0411AB	PACKING CASE,PAPER,SX-PR702M	1
○	14		QPNG0703AA	PAD	2
	15	PE	QPHG028AA	PROTECTION SHEET	1
	16	PE	QPFG013AA	POLYETHYLENE BAG	1
	17	PE	QPFG026AA	POLYETHYLENE BAG	1
	18		QPGG0358AA	PAD	1
	19	PE	SPHG2240A	PROTECTION SHEET	1
	20		SPSG40A	BAND	2
○	21	PE	QPHG093AA	PROTECTION SHEET	2
○	22	PE	QPHG094AA	PROTECTION SHEET	2

	Ref. No.	Part No.	Description	P/S
	OPERATING INSTRUCTION MANUAL			
○	23	QQFGPR702AA	OPERATING INSTRUCTION MANNUAL, EN EK EP X XL XR XS XT XD XP XM XW	1
○	23	QQFGPR702BA	OPERATING INSTRUCTION MANNUAL, M	1
○	23	QQFGPR702CA	OPERATING INSTRUCTION MANNUAL, MC EF	1
○	23-1	QQTG0497A	ENGLISH	1
○	23-2	QQTG0499A	FRANCAIS	1
○	23	QQFGPR702DA	OPERATING INSTRUCTION MANNUAL, EZ	1
○	23	QQFGPR702EA	OPERATING INSTRUCTION MANNUAL, EW	1
○	23-1	QQTG0499A	FRANCAIS	1
○	23-2	QQTG0500A	DEUTSCH	1
○	23	QQFGPR702FA	OPERATING INSTRUCTION MANNUAL, EA	1
○	23	QQFGPR702GA	OPERATING INSTRUCTION MANNUAL, EH	1
○	23-1	QQTG0501A	NERDERLANDS	1
○	23-2	QQTG0499A	FRANCAIS	1
○	23-3	QQTG0500A	DEUTSCH	1

Service Manual

PCM Digital Ensemble

SX-PR702/PR702M

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW), (EA), (EP),
(EK), (XL), (XR), (XS), (XD), (XT), (X), (XP), (XW)

Please file and use this supplemental manual together with the service manual for Model No. SX-PR702/PR702M Order No. EMID981693.

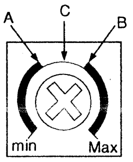
About the adjustment of switching amp

■ ADJUSTMENTS

Adjustment item	Necessary instrument	Adjustment condition	Adjustment point
Switching amp	Adjustment screwdriver not made from metal	Main volume is maximum	V.R. 1 on AS P.C.B.

Adjustments procedures

1. Turn VR1 until the end of the left. (Sounding the noise as a whistle.)
2. Turn VR1 to the right slowly with hearing as a whistle from monitor speaker, there is the point where the noise stops suddenly. (Point-A of Fig 1.)
3. Turn VR1 further to the right, sounding the whistle noise again. (Point-B of Fig 1.)
4. Set VR1 the center of between the point A and B. (Point-C of Fig 1.)



VR1 Fig.1

Change of Parts No.

AS AMP & POWER SUPPLY CIRCUIT (Refer to page Ⅲ-6)

REF. NO.		Parts No.		Description	P/S
		Original	**New**		
		RESISTOR			
	R62	ERDS2TJ222	**ERDS2TJ152**	1.5kΩ	1

⚠WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics

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